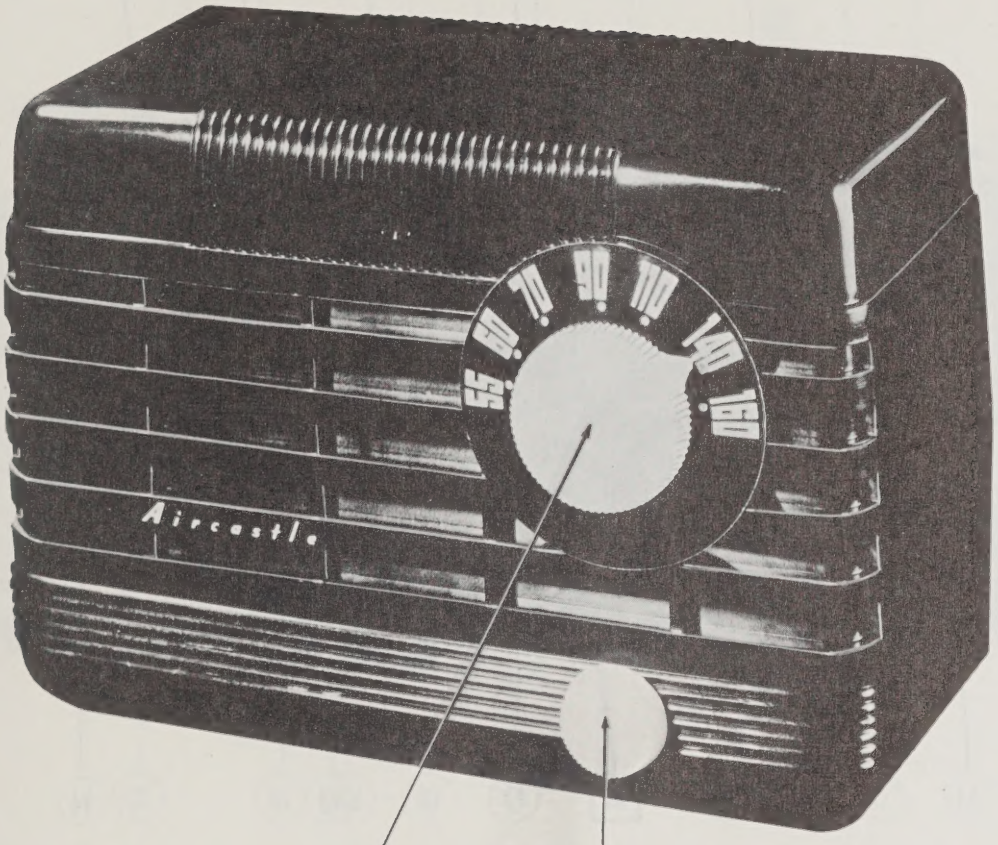
CONTENTS

TRADE NAME	MODEL	FOLDER NO.
Aircastle	211	4913-1
Audar	Model (Telvar) RER-9	4913-2
Capehart	19N4, 21P4, 24N4, 24P4, 26N4, 29P4, 30P4, 31N4, 31P4, 114N4, 116N4, 116P4, 118P4	4913-3
Challenger	CD6	4913-4
Coronado	94RA1-43-7605A	4913-5
Crosley	9-214M, 9-214Mi	4913-6
Hallicrafters	T61, T64, T67, 509, 510 (Tele. Rec.)	4913-7
Majestic	10FM891 (Ch. 10C23E)	4913-8
Mopar	603	4913-9
RCA Victor	8X681, 8X682 (Ch. RC-1061)	4913-10
Rembrandt	721, 1606, 1606-15, 1950 (Tele. Rec.)	4913-11
Silvertone	6200A (Ch.101.800-3) 8200 (Ch. 101.800-2B)	4913-12
Silvertone	9000 (Ch. 132.857)	4913-13
Stewart-Warner	B92CR1, B92CR2, B92CR3, B92CR4, B92CR8, B92CR9, B92CR10 (Codes 9043-A, B, C, D, K, L, M)	4913-14
Truetone	D2606	4913-15
Truetone	D2910	4913-16
Westinghouse	H-196, H-207, (Tele. Rec.)	4913-17

AIRCASTLE
MODEL 211



AIRCASTLE
MODEL 211

AIRCASTLE MODEL 211

TRADE NAME	Aircastle, Model 211
SUPPLIER	Spiegel Inc., 1061 W. 35th St., Chicago 9, Illinois.
TYPE SET	AC-DC Operated Superheterodyne Receiver.
TUBES (FOUR)	Types 12BE6 Converter, 12AT6 DET.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC RATING .26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	530-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not connect a .1 MFD. cap. in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to rear stator of tuning gang. Low side to B-.	455KC	Tuning gang fully open.	Across Voice Coil.	A1, A2	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	.1MFD	"	1620KC	"	"	A3	Adjust for maximum output.
3.	75MMF	High side to antenna hank. Low side to chassis.	1400KC	Tune for max. signal.	"	A4	" "

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PARTS LIST AND DESCRIPTIONS

AIRCASTLE
MODEL 211

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRCASTLE PART No.	STANDARD REPLACEMENT		
V1	Converter	12BE6	12BE6	7CH	
V2	DET.-AVC-AF Amp.	12AT6	12AT6	7BT	
V3	Power Output	50B5	50B5	7BZ	
V4	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	40	150	CE-15	PRSA150/40	EDL4415		DSB-2x40	TA-440	Filter Red
B	40	150		-40			-150		Filter Green
C2	.05	200	CP-503-4	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C3	100	500	CM-101-2	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
C4	.002	400	CP-202-2	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Audio Coupling
C5	6000	500	CP-502-3	1467-006	1D5D6	GP2-335-00 75	MW.5-26	1FM-26	Audio Coupling
C6	.02	400	CP-203-1	P488-02	GT4S2		ST-4-02	TM-12	Output Plate Bypass
C7	.02	400	CP-203-1	P488-02	GT4S2		ST-4-02	TM-12	Rect Plate Bypass
C8	.05	200	CP-503-4	P288-05	GT4S5		ST-4-05	72P1	Line Isolation

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	2 Meg	½	VC-11	D13-139#	M-66-Z#	Volume control
B	Shaft		Not Req.	A	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	41	SW-A	Attach to R1A per instructions

#Install a 100KΩ Resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control. (Controls viewed from shaft side, terminals down).

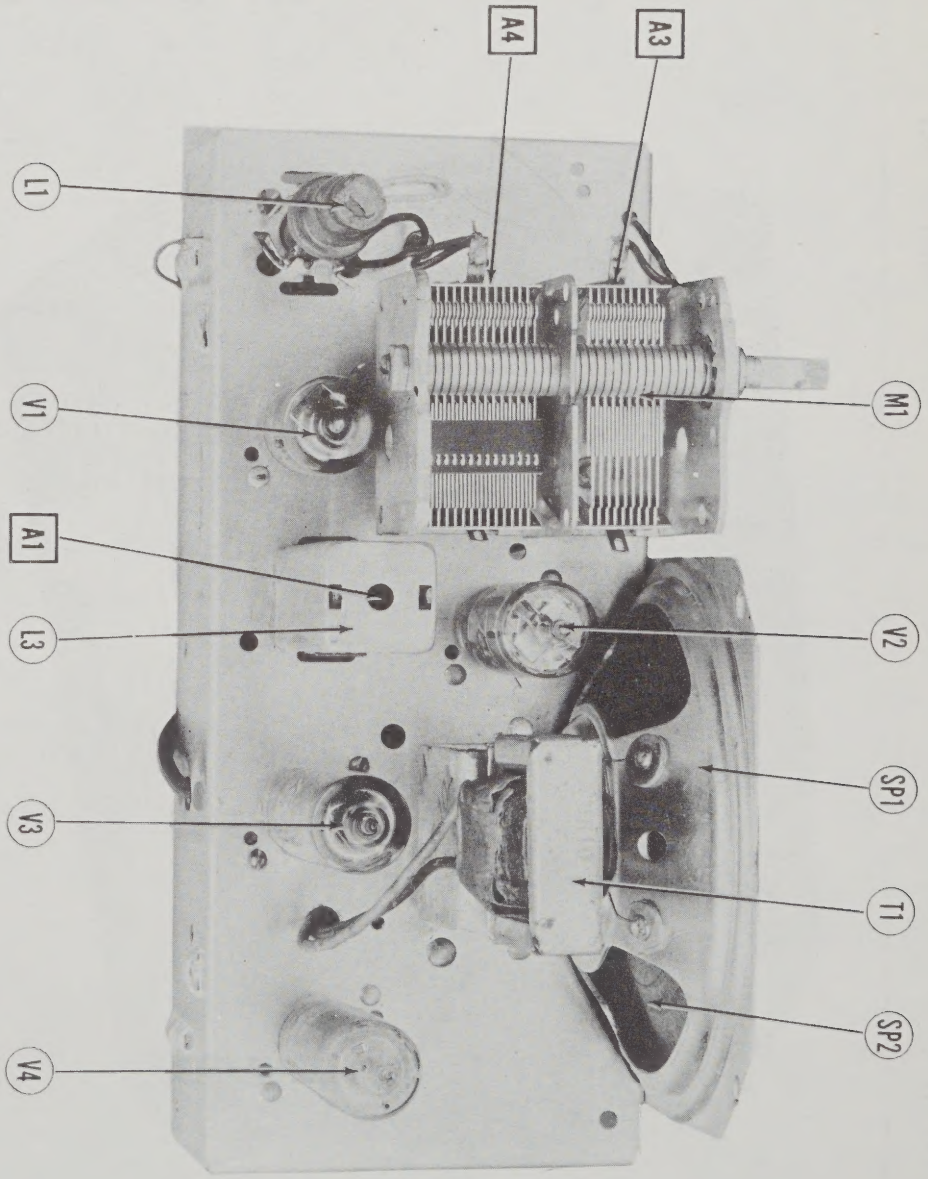
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRCASTLE PART No.	IRC PART No.	
R2	18KΩ	½	RC-183-2	BTS-18K	Osc. Grid
R3	4.7 Meg	½	RC-475-1	BTS-4.7 Meg	Diode Filter
R4	10 Meg	½	RC-106-1	BTS-10 Meg	AF Grid
R5	220KΩ	½	RC-224-1	BTS-220K	AF Plate
R6	330KΩ	½	RC-334-1	BTS.330K	Output Grid
R7	2000Ω	2	RC-222-5	BT-2-2200	Filter
R8	18Ω	½	RC-180-1		Rectifier Ballast
R9	39Ω	1	RW-390-5	BW-1-39	Filament Dropping

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	3000Ω	2.9Ω	280Ω	.7Ω	TR-10A	A-3332		A-3025	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V.C. IMP.		ST-113†		
SP1	PM	2.9Ω	SP-47-10A	MOD.P4-X	4A07†	†Remount Output Transformer
	CONE DIA.	V.C. DIA.				
SP2	3-7/8"	9/16"				

R F COILS

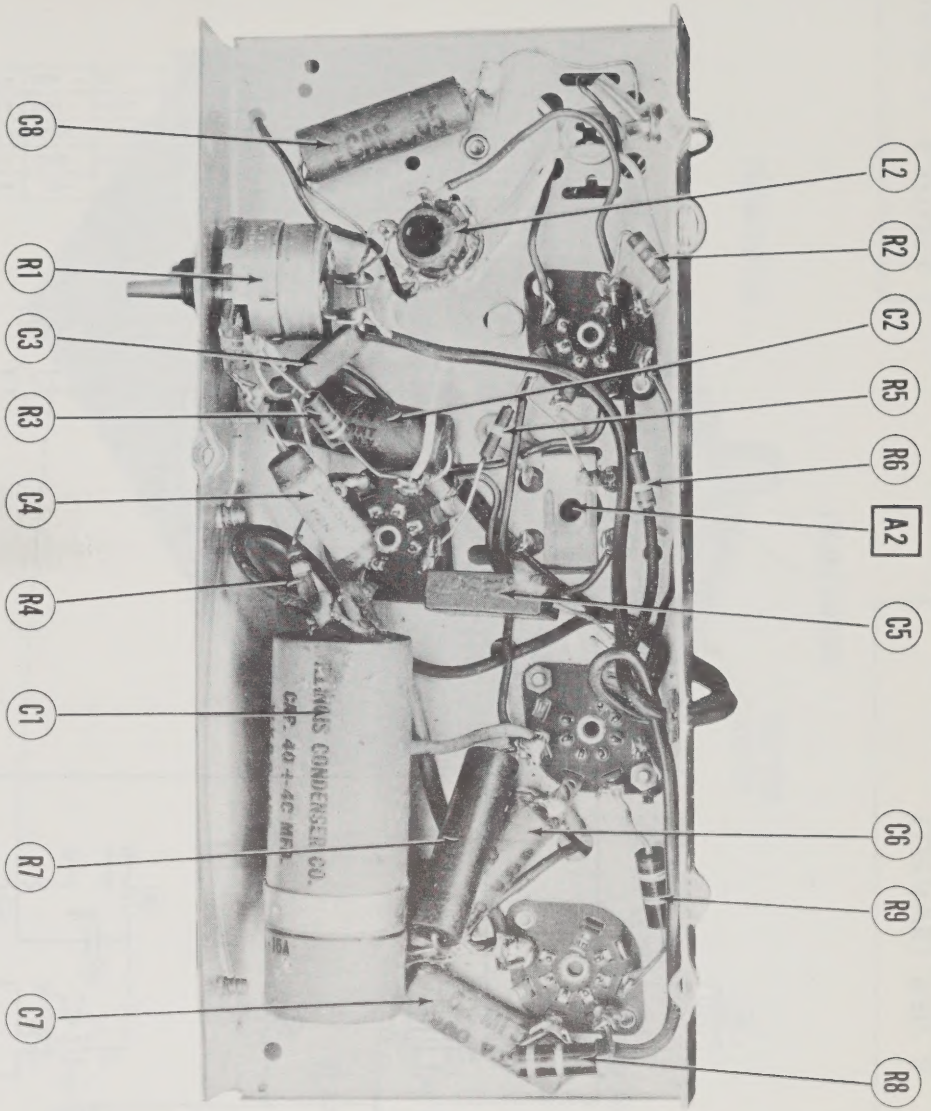
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRCASTLE PART No.	MEISSNER PART No.	
L1	Ant. Coil	42Ω	2.2Ω	LA-5	14-1056	
L2	Osc. Coil	.5Ω	6Ω	LC-6	14-1060‡	
L3	IF Trans.	18.5Ω	18.5Ω	LF-24	16-6678	

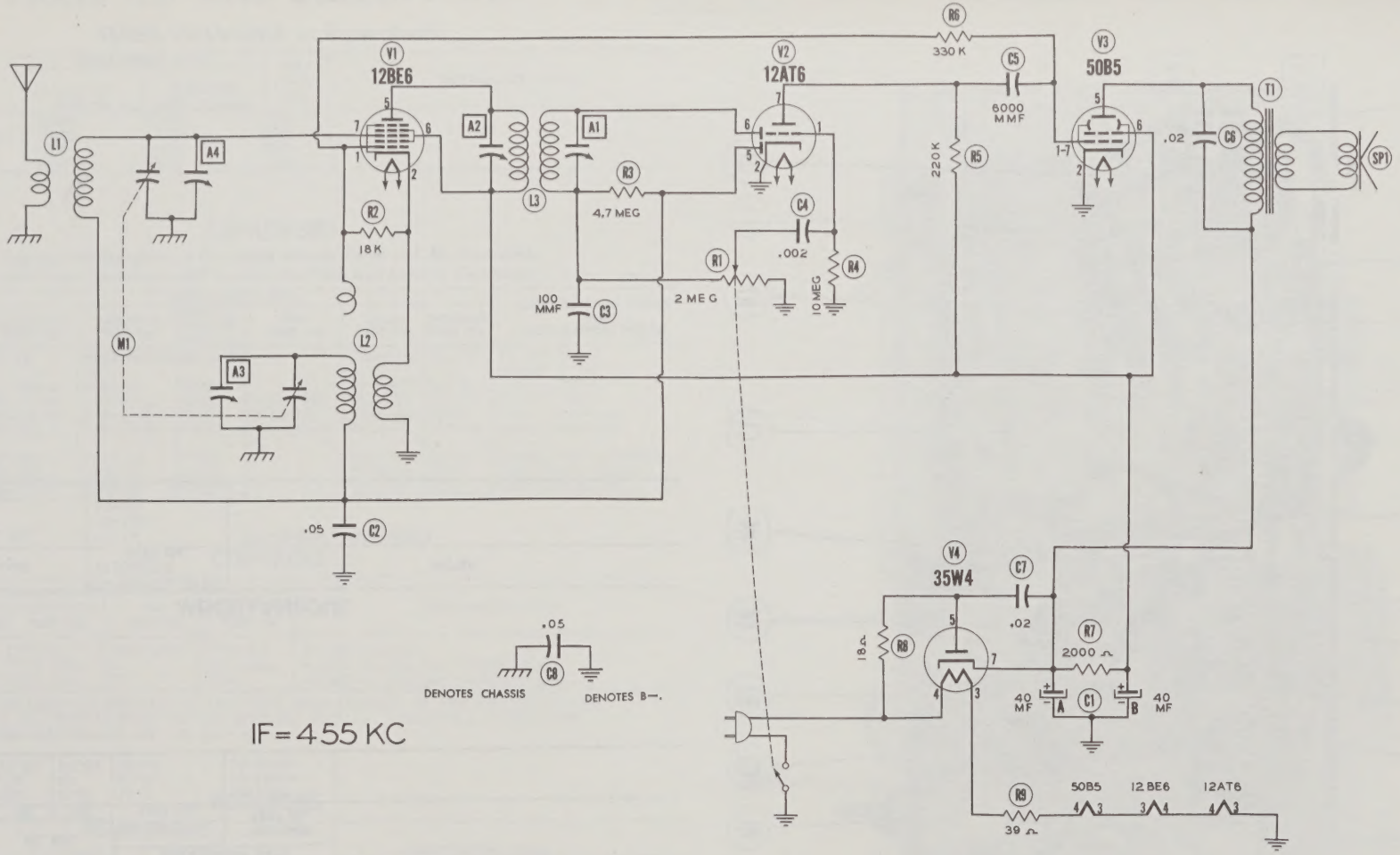
‡Add 50MMF from high side tuning cap. to Osc. Grid.

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M1	2 Gang Var. Cap.	CV-14	(27-446MMF, 24-185MMF)
	Cabinet	CB-106	
	Knob	KN-20	
	Pointer Knob	KN-21	

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-6.4VDC	0V	25VAC	10VAC	100VDC	100VDC	-.3VDC
V 2	12AT6	-.7VDC	0V	0V	10VAC	-.3VDC	-.3VDC	50VDC
V 3	50B5	-1.1VDC	0V	25VAC	75VAC	115VDC	100VDC	-1.1VDC
V 4	35W4	0V	0V	80VAC	117VAC	115VAC	110VAC	127VDC

§Taken with vacuum tube voltmeter.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	18KΩ	.5Ω	24Ω	12Ω	†2KΩ	†2KΩ	6.7 Meg
V 2	12AT6	10 Meg	0Ω	0Ω	12Ω	6.7 Meg	2 Meg	†224KΩ
V 3	50B5	340KΩ	0Ω	24Ω	75Ω	†270KΩ	†2KΩ	340KΩ
V 4	35W4	INF	INF	110Ω	150Ω	165Ω	140Ω	170KΩ

†Measured from Pin 7 of V4.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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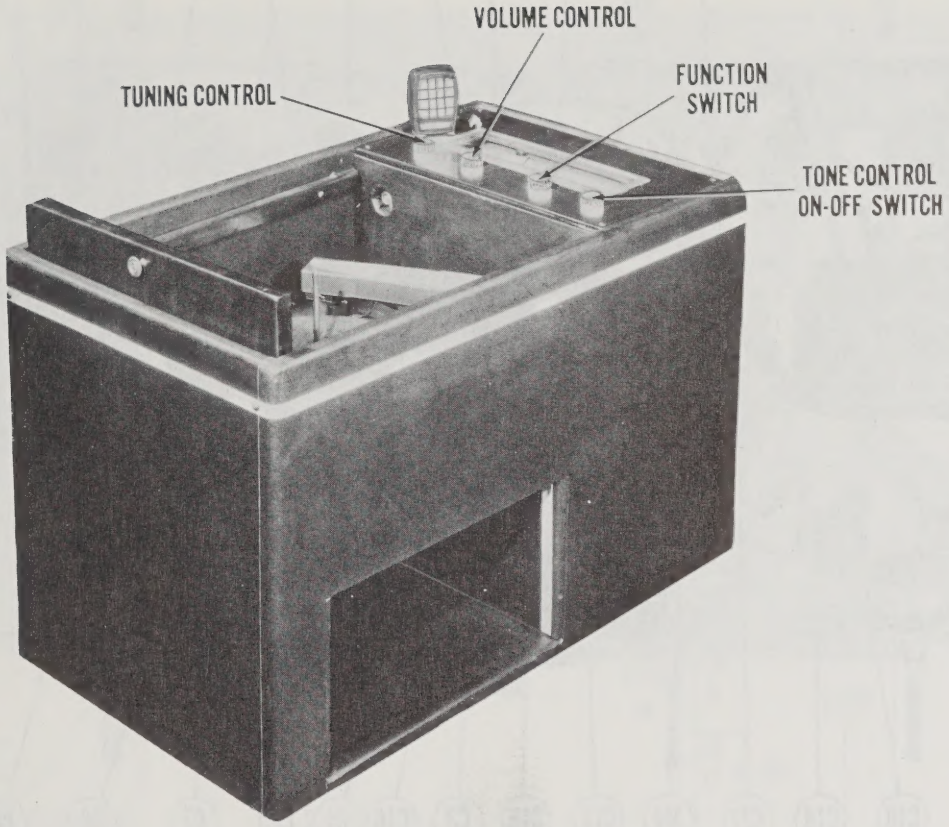
4913-1

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



AUDAR MODEL
(TELVAR) RER. 9

AUDAR MODEL
(TELVAR) RER. 9

AUDAR MODEL (TELVAR) RER-9

TRADE NAME	Audar, Model (Telvar) RER-9
MANUFACTURER	Audar, Inc., Walnut & Maple Sts., Argos, Indiana
TYPE SET	AC Operated Combination Phono-Recorder-Radio, Superheterodyne Receiver.
TUBES (EIGHT)	Types 6SK7 RF Amp., 6SA7 Converter, 6SF7 IF-DET-AVC, 6SQ7 AF-Volume Ind, Rect., 6U5/6G5 Tuning Eye-Volume Ind., 6SN7GT MIC. Pre Amp., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .67 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1720KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Make all RF adjustments with a dummy antenna, which consists of a piece of wire approximately 8 feet long, connected to the antenna jack. Signal generator should be connected to a short length of wire placed several inches from the dummy antenna.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to ant. jack, low side to chassis.	455KC	Radio	Tuning cap. fully open.	Across voice coil.	A1, A2	Adjust for maximum output.
2.	.05MFD	"	455KC	"	"	"	A3, A4	"
3.	Dummy	Pre-alignment instructions.	540KC	"	Tuning cap. fully closed	"	A5	"
4.	Dummy	"	1720KC	"	Tuning cap. fully open.	"	A6	Adjust for maximum output. Repeat steps 3 and 4.
5.	Dummy	"	1400KC	"	Tune for maximum output.	"	A7, A8	Adjust for maximum output. Rock tuning capacitor while adjusting.
6.	Dummy	"	600KC	"	"	"	A9, A10	"

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AUDAR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6SK7	6SK7	8N	
V2	Converter	6SA7	6SA7	8R	
V3	IF Amp.-DET-AVC	6SF7	6SF7	7AZ	
V4	AF Amp.-Volume Ind. Rect.	6SQ7	6SQ7	8Q	
V5	Tuning Eye-Volume Ind.	6U5/6G5	6U5/6G5	6R	
V6	1st & 2nd MIC Pre Amp.	6SN7GT	6SN7GT	8BD	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AUDAR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	450		GL450/20-2C	KRC5220			PLS-30	Red Filter
B	10	450						UT-10	Green Filter
C2A	30	450		GL450/20-2C	KRC5220			PLS-30	Red Filter
B	10	450						UT-10	Blue Filter
C3	25	25		PRS25/25	BR252A		M-25-25	TA-25	Mike Pre-Amp. Cath. Byp.
C4	25	25		PRS25/25	BR252A		M-25-25	TA-25	Mike Pre-Amp. Cath. Byp.
C5	25	25		PRS25/25	BR252A		M-25-25	TA-25	Output Plate Bypass
C6	.05	400		P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C7	.1	400		P488-1	GT4P1		ST-4-1	TM-1	RF Screen Bypass
C8	50	500		1469-00005	5R5Q5	NP0M-50	M0S.5-45	MS-45	Fixed Trimmer
C9	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Bias Filter
C10	50	500		1468-00005	5W5Q5	GP1K-50	M0.5-45	1FM-45	Osc. Grid Cap
C11	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Osc. Anode Bypass
C12	.1	400		P488-1	GT4P1		ST-4-1	TM-1	IF Screen Bypass
C13	100	500		1468-0001	5W5T1	GP1K-100	M0.5-31	1FM-31	Diode Filter
C14	100	500		1468-0001	5W5T1	GP1K-100	M0.5-31	1FM-31	Diode Filter
C15	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C16	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C17	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C18	500	500		1468-0005	5W5T5	GP2K-500	M0.5-35	1FM-35	Tone Compensation
C19	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Tone Compensation
C20	250	500		1468-00025	5W5T25	GP2K-250	M0.5-325	1FM-325	2nd AF Plate Bypass
C21	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Vol. Ind. Grid Cap
C22	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C23	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Indicator Coupling
C24	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Line Filter

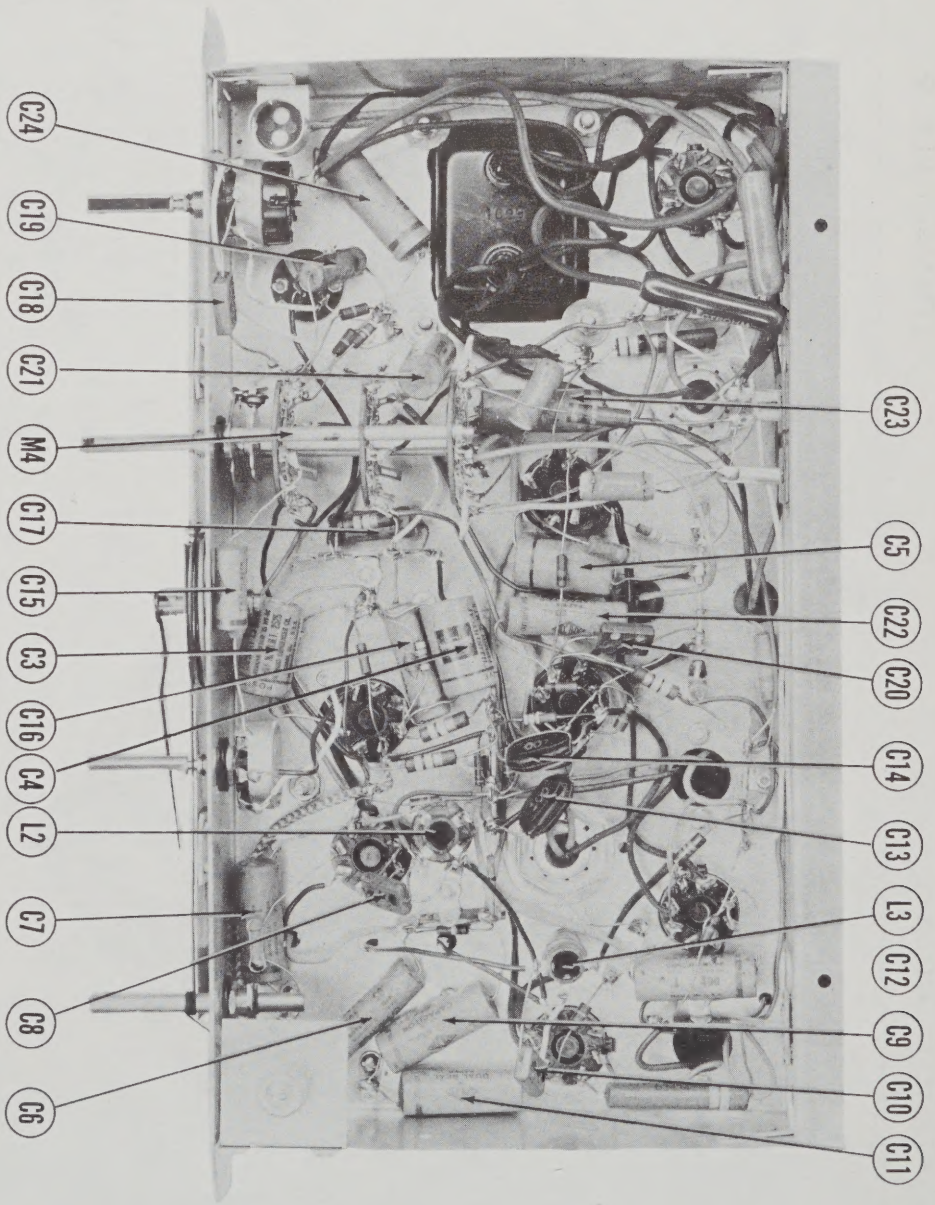
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUDAR PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	1 Meg	½		D13-137	M-63-Z	Volume control
B	Shaft			A	Not Req.	Attach to R1A per instructions
R2A	1 Meg	½		D13-137	M-63-Z	Tone control
B	Shaft			A	Not Req.	Attach to R2A per instructions
C	Switch			41	SW-A	Attach to R2A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUDAR PART No.	IRC PART No.	IDENTIFICATION CODES
R3	100KΩ	½		BTS-100K	AVC Network
R4	100Ω	½		BW-½-100	RF Cathode
R5	68KΩ	½		BTS-68K	RF Screen Decoupling
R6	22KΩ	½		BTS-22K	Osc. Grid
R7	22KΩ	½		BT-2-22K	Osc. Screen Decoupling
R8	2 Meg	½		BTS-2.2 Meg	AVC Network
R9	68KΩ	½		BTS-68K	IF Screen Decoupling

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AUDAR PART No.	IRC PART No.	
R10	47KΩ	½		BTS-47K	Diode Filter
R11	470KΩ	½		BTS-470K	Diode Load
R12	1 Meg	½		BTS-1 Meg	Indicator Rect. Diode Load
R13	10 Meg	½		BTS-10 Meg	AF Grid
R14	220KΩ	½		BTS-220K	AF Plate
R15	1 Meg	½		BTS-1 Meg	Tuning Eye Plate
R16	2 Meg	½		BTS-2.2 Meg	Tuning Eye Filter
R17	1 Meg	½		BTS-1 Meg	Voltage Divider
R18	10KΩ	1		BTA-10K	Series Cutter
R19	5Ω	5		AB-5	Series Voice Coil
R20	5Ω	5		AB-5	Voice Coil Shunt
R21	470KΩ	½		BTS-470K	Tone Compensation
R22	22KΩ	½		BTS-22K	Tone Compensation
R23	22KΩ	½		BTS-22K	Tone Compensation
R24	1 Meg	½		BTS-1 Meg	1st Mike Amp. Grid
R25	4700Ω	½		BTS-4700	1st Mike Amp. Cathode
R26	220KΩ	½		BTS-220K	1st Mike Amp. Plate
R27	4700Ω	½		BTS-4700	2nd Mike Amp Cathode
R28	220KΩ	½		BTS-220K	2nd Mike Amp. Plate
R29	220KΩ	½		BTS-220K	Tone Compensation
R30	47KΩ	½		BTS-47K	Filter
R31	1000Ω	10		AB-1000	Filter
R32	33Ω	1		BW-1-33	Bias Network
R33	1 Meg	½		BTS-1 Meg	Bias Network
R34	5000Ω	10		AB-5000	Filter
R35	270KΩ	2		BT-2-270K	Bleeder
R36	330Ω	1		BTA-330	Output Cathode
R37	47OK	½		BTS-470K	Output Grid
R38	1 Meg	½		BTS-1 Meg	Feedback

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AUDAR PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .60A	740VAC CT @ .057A	5VAC @ 2A	6.6VAC @ 3A		P-6011	PH-70B	P-2951

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AUDAR PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	8KΩ	3.6Ω	450Ω	.4Ω		A-3823	RO-9#	A-2904	#Drill One New Mtg. Hole.

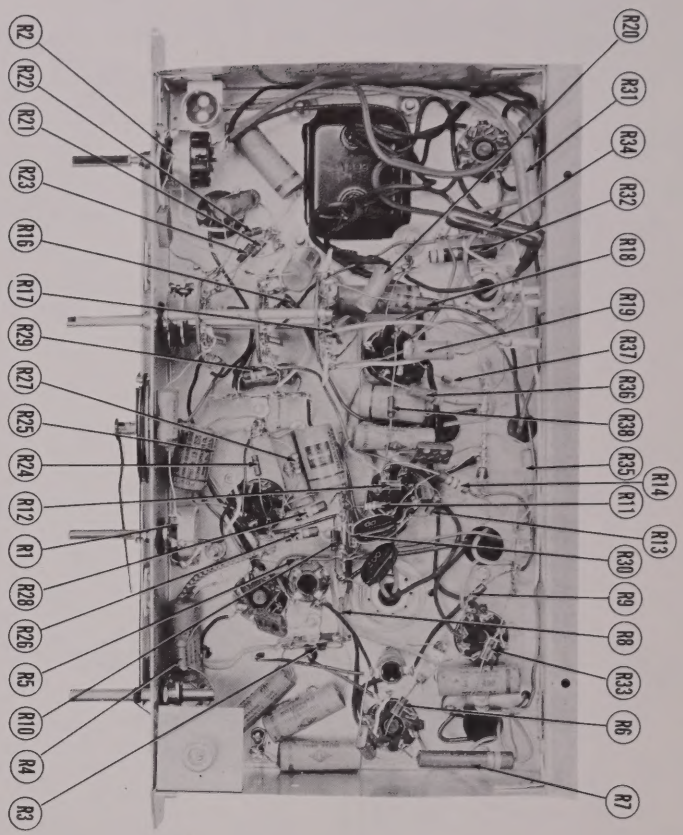
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AUDAR PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V.C. IMP.		ST-810 MOD.P69-V	69A3	
	PM	3.6Ω				
SP2	CONE DIA. 6"x9"	V.C. DIA. 3/4"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	AUDAR PART No.	MEISSNER PART No.
L1	Ant. Loading Coil,	3Ω			
L2	RF Coil	100Ω	3Ω		
L3	Osc.Coil	5.5Ω			14-1060
L4	Input IF	10Ω	13Ω		16-6666
L5	Output IF	30Ω	30Ω		16-6667

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

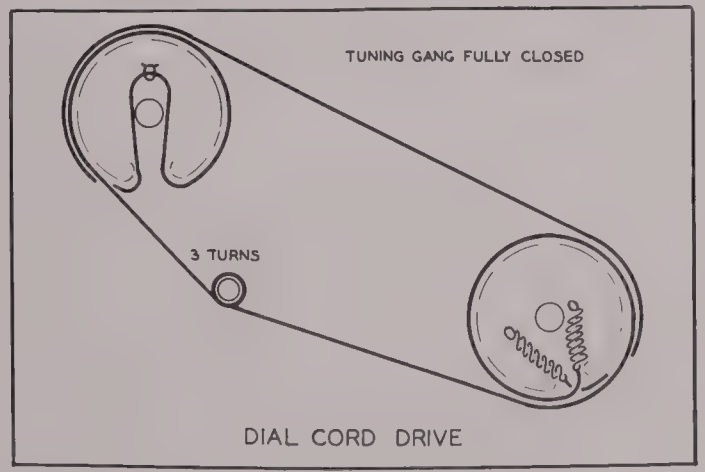
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AUDAR PART No.		
M1	Bayonet	6-8V	0.2A	White			Type #51
M2	Bayonet	6-8V	0.2A	White			Type #51

PHONO CARTRIDGE

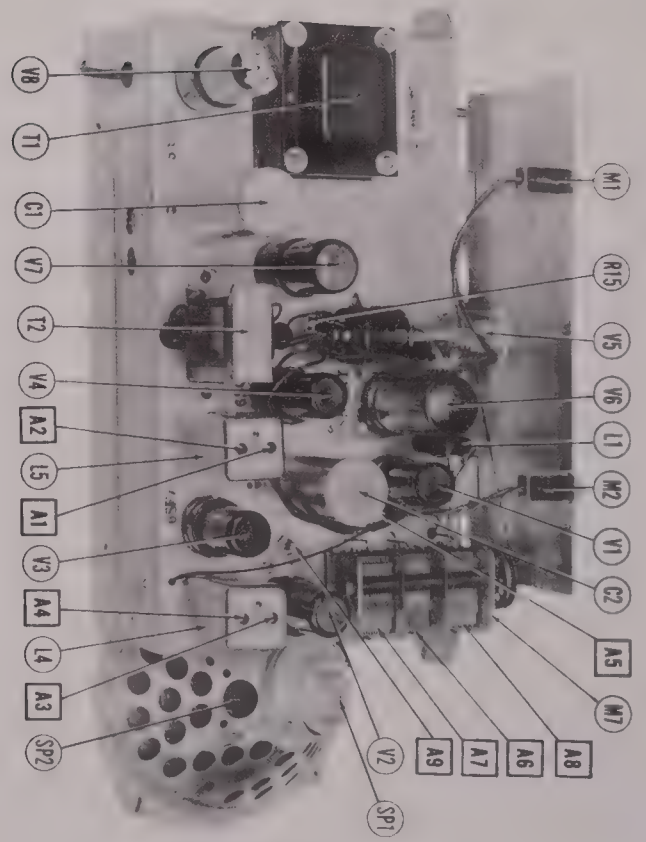
ITEM No.	REPLACEMENT DATA		REMARKS
	AUDAR PART No.	ASTATIC PART No.	
M3		L-70	

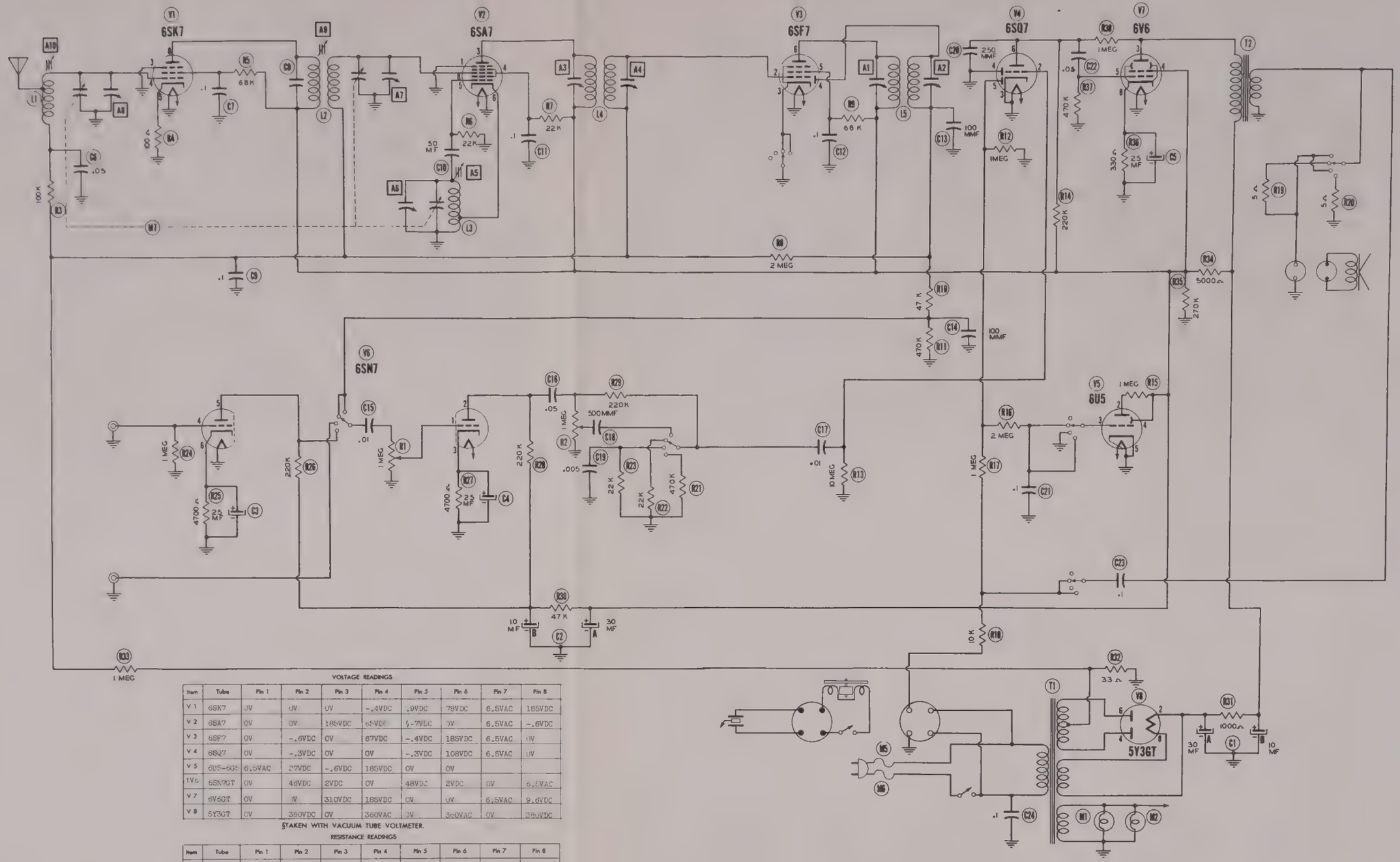
MISCELLANEOUS

ITEM No.	PART NAME	AUDAR PART No.	NOTES
M4	Switch		Band
M5	Fuse		3 Amp.
M6	Fuse		3 Amp.
M7	3 Gang Var. Cap.		(30-467MMF, 30-467MMF, 26-197MMF)



CHASSIS—TOP VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7	0V	0V	0V	-.4VDC	.9VDC	78VDC	6.5VAC	185VDC
V 2	6SA7	0V	0V	185VDC	6.9VDC	5.7VDC	0V	6.5VAC	-.6VDC
V 3	6SF7	0V	-.6VDC	0V	67VDC	-.4VDC	185VDC	6.5VAC	0V
V 4	6SQ7	0V	-.3VDC	0V	0V	-.3VDC	108VDC	6.5VAC	0V
V 5	6U5-6G5	6.5VAC	27VDC	-.6VDC	185VDC	0V	0V		
†V6	6SN7GT	0V	46VDC	2VDC	0V	48VDC	2VDC	0V	6.5VAC
V 7	6V6GT	0V	0V	310VDC	185VDC	0V	0V	6.5VAC	9.6VDC
V 8	5Y3GT	0V	380VDC	0V	360VAC	0V	360VAC	0V	380VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SK7	0Ω	0Ω	0Ω	800KΩ	100Ω	*70KΩ	.2Ω	*5.5KΩ
V 2	6SA7	0Ω	0Ω	*5.5KΩ	*27KΩ	22KΩ	.5Ω	.2Ω	70KΩ
V 3	6SF7	0Ω	700KΩ	0Ω	*70KΩ	420KΩ	*5.5KΩ	.2Ω	0Ω
V 4	6SQ7	0Ω	10 Meg	∞	0Ω	1 Meg	*240KΩ	.2Ω	0Ω
V 5	6U5-6G5	.2Ω	*1 Meg	700KΩ	*5.5KΩ	0Ω	0Ω		
†V6	6SN7GT	1 Meg	*300KΩ	4.7KΩ	0Ω	*270KΩ	4.7Ω	0Ω	.2Ω
V 7	6V6GT	0V	0V	*1200Ω	*6KΩ	470KΩ	INF	.2Ω	330Ω
V 8	5Y3GT	INF	150KΩ	INF	400Ω	INF	380Ω	INF	150KΩ

*Measured from Pin 2 of V8.
†Reading taken with switch in mike record position.

IF=455 KC

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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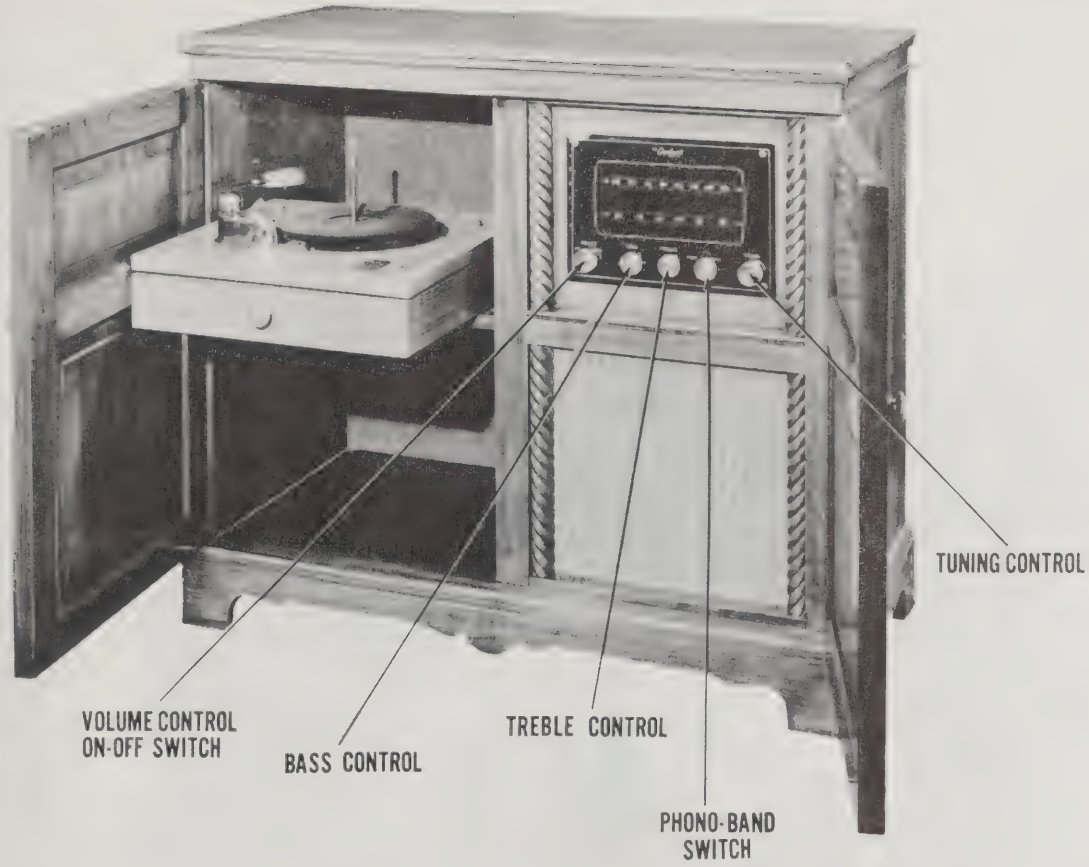
PHOTOFACT* Folder

CAPEHART MODELS
19N4, 21P4, 24N4, 24P4, 26N4, 29P4, 30P4, 31N4, 31P4, 114N4, 116N4, 116P4, 118P4

CAPEHART MODELS
19N4, 21P4, 24N4, 24P4, 26N4, 29P4, 30P4, 31N4, 31P4, 114N4, 116N4, 116P4, 118P4



CAPEHART MODELS
19N4, 21P4, 24N4, 24P4, 26N4, 29P4, 30P4, 31N4, 31P4, 114N4, 116N4, 116P4, 118P4

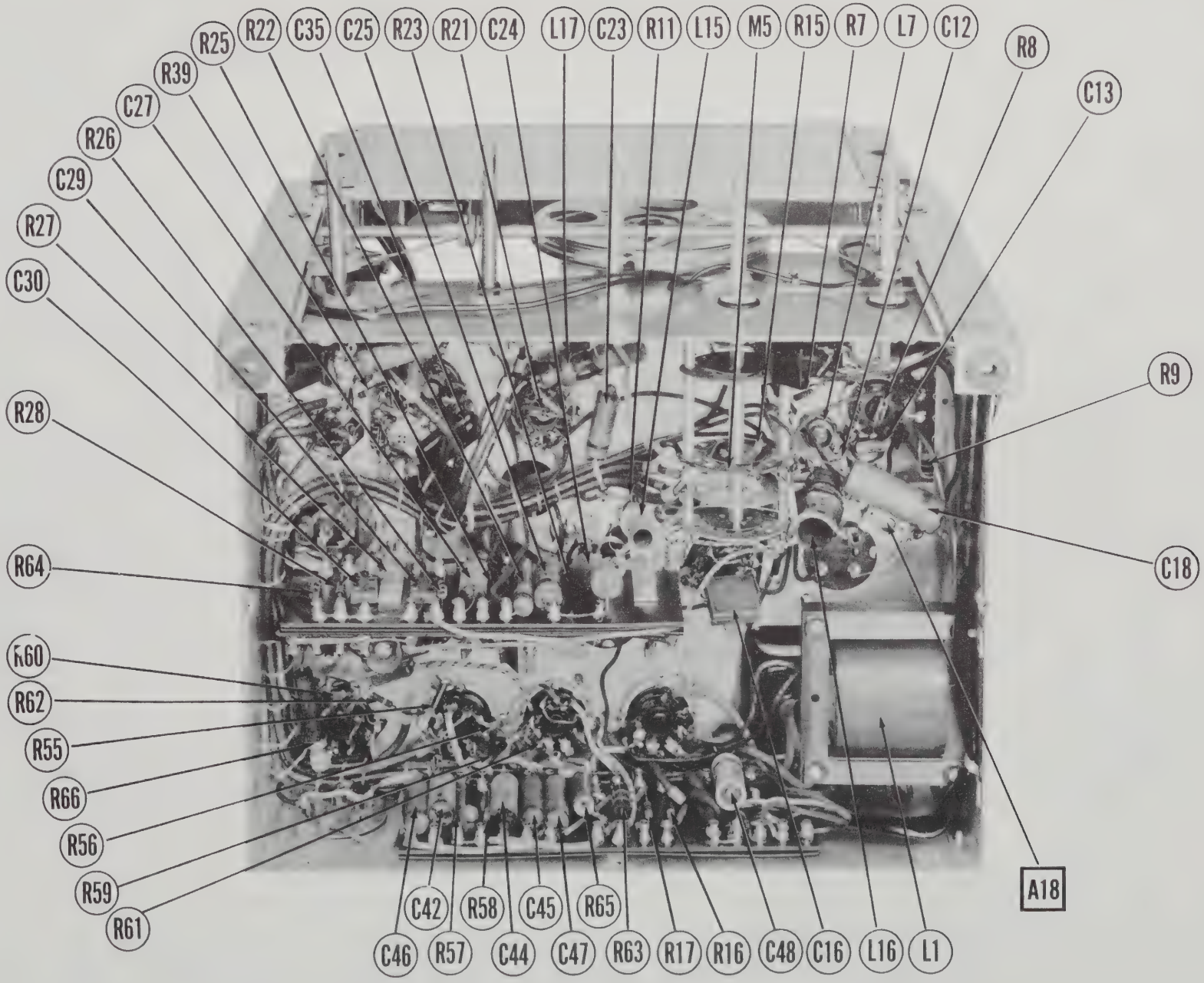
CAPEHART MODEL 29P4

TRADE NAME	Capehart, Models 19N4, 21P4, 24N4, 24P4, 26N4, 29P4, 30P4, 31N4, 31P4, 114N4, 116N4, 116P4, 118P4
MANUFACTURER	Farnsworth Television and Radio Corp., Fort Wayne, Indiana
TYPE SET	AC Operated Combination Phono-Radio. AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(ELEVEN)	Types 6AG5 RF Amp., 6SB7Y FM Converter, 6SG7 AM RF-FM 1st IF, 6SA7 AM Converter, 6SF7 AM IF-DET-AVC, FM 2nd IF, 6H6 Ratio Detector, 6SC7 or 6J7 Phono Pre-Amp., 6SL7GT AF-Phase Inverter, (2) 6V6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .82 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC — FREQ. MOD. 87.5-108.5MC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7/49 4913-3 SET #65 FOLDER 3


R25
R22
C35
C25
R23
R21
C24
L17
C23
R11
L15
M5
R15
R7
L7
C12
R8
C13
R39
C27
R26
C29
R27
C30
R9
R28
C18
R64
R60
R62
R55
R66
R56
R59
R61
A18
C42
R58
C45
R65
C46
R57
C44
C47
R63
R17
R16
C48
C16
L16
L1

R6
R5
L8
C11
C9
L6
R10
C14
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R14
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L10
L12
C26
R24
C28
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C43
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C6
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R31
C31
R35
R43
R37
R42
R38
R40
R41
R36
R34
C41
R1
C38
C3
C39
R54
C34
R33
R3
C22
R2
C40
R12
L3
C7
M6
C8
R4
L4
L5
C10

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	FM RF Amp.	6AG5	6AG5	7BD	
V2	FM Converter	6SB7Y	6SB7Y	8R	
V3	AM RF-FM 1st IF	6SG7	6SG7	8BK	
V4	AM Converter	6SA7	6SA7	8R	
V5	AM IF-DET-AVC, FM 2nd IF	6SF7	6SF7	7AZ	
V6	Ratio Det.	6H6	6H6	7Q	
V7A	Phono Pre-Amp.	6SC7	6SC7	8S	Used in P4 series
B	Phono Pre-Amp.	6J7	6J7	7R	Used in N4 series
V8	AF-Phase Inv.	6SL7GT	6SL7GT	8BD	
V9	Power Output	6V6GT	6V6GT	7AC	
V10	Power Output	6V6GT	6V6GT	7AC	
V11	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CAPEHART PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	450	25214	AF444J4A*	UP222 45C*		DY-403	EL-424	▲Filter
B	20	450		PRS450/10	BR1045				▲Filter ■Filter Output Cath. Bypass
C	20	450							
D	20	25							
C2A	30	450	25214	AF444J4A*	UP222 45C*		DY-403	EL-424	■Decoupling Note 1
B	20	450		PRS450/10	BR1045				▲Decoupling Note 1 ■Decoupling Note 1 Cathode Bypass
C	20	450							
D	20	25							
C3	50	25	25269	PRS25/50	BR502		M-50-25	TA-50	Bias Filter Note 1
C4	20	25							Bias Filter Note 2
C5A	20	450	25214	AF444J4A*	UP222 45C*		DY-403	EL-424	Decoupling Note 2
B	20	450		PRS450/10	BR1045				Filter Note 2
C	30	450							Filter Note 2
C6	4	100	25270	PRS150/4	BR415		M-4-450	UT-41	Stabilizing Cap
C7	60		25333	1468-00005	5W5Q7	GP1K-50	MO.5-45	1FM-45	RF Coupling
C8	1500	350	25273	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	AVC Filter
C9	1500	350	25273	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	FM RF Screen Bypass
C10	1500	350	25273	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	FM RF Plate Decoup.
C11	30		25332	1468-00004	5W5Q3	NPOL-33	MO.5-43	MS-43	RF Coupling
C12	30		25329	1468-00004	5W5Q3	NPOL-33	MO.5-43	MS-43	Osc. Grid Cap
C13	1500	350	25273	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	RF Bypass
C14	1500	350	25273	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	FM Conv. Plate Decoup.
C15	100	500	25188	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C16	4000	300	25271	1467-004	1D5D4	GP2M-005	MW.5-24	1FM-24	1st IF Screen Bypass
C17	250	500	25187	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	1st IF Plate Decoup. Note 3
C18	.1	400	25215	P488-1	GT4P1		ST-4-1	TM-1	AM RF Plate Decoup. Note 1
C19	1500	350	25273	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	AM RF Plate Decoup. Note 2
C20	30		25329	1468-00004	5W5Q3	NPOL-33	MO.5-43	MS-43	1st IF Plate Decoup. Note 2
C21	250	500	25187	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	RF Coupling Note 2
C22	47	500	25193	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C23	.005	600	25183	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	RF Bypass
C24	.1	200	25215	P288-1	GT2P1		ST-2-1	TM-1	AVC Filter
C25	.05	200	25196	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C26	4000	300	25271	1467-004	1D5D4	GP2M-005	MW.5-24	1FM-24	2nd IF Screen Bypass
C27	.01	600	25194	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	AM IF Plate Decoup.
C28	4		25327	1469-0000 05	5R5V5	NPOK-5	MOS.5-55	MS-55	IF Coupling
C29	100	500	25188	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter Note 2
C30	100	500	25188	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
C31	80		25406	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Load Cap. Note 4
C32	80		25406	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Load Cap. Note 4
C33	.001	600	25053	P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	De-emphasis
C34	.05	200	25196	P288-05	GT2S5		ST-4-05	TM-15	Audio Coupling Note 1
C35	.01	400	25194	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tone Comp. Note 1
C36	2000		25295	1467-002	1W5D2	GP2M-002	MW.5-22	1FM-22	Audio Coupling Note 2
C37	100	500	25188	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Tone Comp. Note 2
C38	.001	600	25197	P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Audio Coupling
C39	.003	600	25184	P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Tone Comp.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R44	470KΩ	½	77217	BTS-470K	Voltage Dropping See Note 2
R45	33KΩ	½	77267	BTS-33K	Filter See Note 2
R46	1.5 Meg	½	77351	BTS-1.5 Meg	Tone Compensation See Note 2
R47	1 Meg	½	77218	BTS-1 Meg	Phono Pre Amp Grid See Note 2
R48	100KΩ	½	77214	BTS-100K	Bias Network See Note 2
R49	470KΩ	½	77217	BTS-470K	Phono Pre Amp. Screen See Note 2
R50	68KΩ	½	77305	BTS-68K	Phono Pre Amp. Plate See Note 2
R51	33KΩ	½	77267	BTS-33K	Phono Pre Amp. Plate See Note 2
R52	33KΩ	½	77267	BTS-33K	Phono Pre Amp. Decoupling See Note 2
R53	100KΩ	½	77214	BTS-100K	Tone Compensation See Note
R54	100KΩ	½	77214	BTS-100K	Tone Compensation
R55	1 Meg	½	77218	BTS-1 Meg	AF Grid
R56	3300Ω	½	77210	BTS-3300	AF Cathode
R57	470KΩ	½	77217	BTS-470K	AF Plate
R58	470KΩ	½	77217	BTS-470K	Phase Inv. Plate
R59	1 Meg	½	77218	BTS-1 Meg	Phase Inv. Grid
R60	220KΩ	½	77216	BTS-220K	Output Grid
R61	220KΩ	½	77216	BTS-220K	Output Grid
R62	220KΩ	½	77216	BTS-220K	Output Grid
R63	270Ω	2	77189	BW-2-270	Output Cathode
R64	22Ω	½	77360	BW-½-22	Bias Network
R65	1000Ω	5	77440	AB-1000	Filter
R66	4.7Ω	2		BW-2-4.7	Fil. String
R67	30Ω	10		AB-30	Matching

Note Used In Early Production N4 Tuners Only.
Note 1 Used In P4 Models Only.
Note 2 Used In N4 Models Only.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.
T1	117VAC @ .82A	600VCT @ .107A DC	5VAC @ 2A	6.4VAC @ 4A	94225			P-29521†

†Use Series Resistor To Reduce Plate Voltage.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
T2	7100Ω CT	7Ω	360Ω CT	.5Ω	94260	A-3880	RO-110#	A-2905	#Drill One New Mtg. Hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	V.C. IMP.		ST-673		
SP1A	PM	7Ω	81156	MOD.P12-Q ST-589		
B	PM	16Ω	81184	MOD.Q8-P		
	CONE DIA.	V.C. DIA.				
SP2A	11-3/8"	1-1/4"				
B	5"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: CAPEHART PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
L1	.050A	450Ω	4H	94226	C-1706*	R-650*	C-2981*	*Drill New Mtg. Holes.

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA CAPEHART PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C40	.002	600	25185	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Tone Comp.
C41	.01	400	25194	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C42	.01	600	25194	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Tone Comp.
C43	470	500	25189	1468-0005	5W5T5	GP2K-500	M0.5-35	1FM-35	Tone Comp.
C44	.01	400	25194	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C45	.01	600	25194	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C46	.003	600	25184	P688-003	GT6D3		ST-6-003	TM-23	Output Plate Bypass
C47	.003	600	25184	P688-003	GT6D3		ST-6-003	TM-23	Output Plate Bypass
C48	.01	600	25209	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Line Filter
C49	1	100		484-1.0	GT2W1		ST-2-1M	TC-10	Audio Coupling
C50	.1	200	25215	P288-1	GT2P1		ST-2-1	TM-1	Phono Pre-Amp Screen Byp.

*Parallel Sections To Obtain Desired Capacity.
NOTE 1 Used Only In The P4 Series.
NOTE 2 Used Only In The N4 Series.
NOTE 3 Not Used In All Models.
NOTE 4 When Either Item C31 Or C32 Are Replaced, Replace Both with Capacitors Of Equal Value.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CAPEHART PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1	3 Meg	½	78101			Volume Control Tapped @ 1.5 Meg.
R2A	3.2 Meg	½	78123	D13-140E	AM-67-Z	Treble Control.
B	Shaft		Not Req.	E	KSS-3	Attach To R2A Per Instructions.
R3	3.2 Meg	½	78148			Bass Control.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CAPEHART PART No.	IRC PART No.	IDENTIFICATION CODES
R4	100KΩ	½	77214	BTS-100K	FM RF Grid.
R5	15KΩ	½	77265	BTS-15K	FM RF Screen
R6	1000Ω	½	77262	BTS-1000	FM RF Plate Decoupling
R7	10KΩ	½	77212	BTS-10K	FM RF Coil Shunt
R8	22KΩ	½	77266	BTS-22K	FM RF Osc. Grid
R9	10KΩ	2	77013	BT-2-10K	FM RF Osc. Anode
R10	1000Ω	½	77262	BTS-1000	FM RF Converter Plate Decoupling
R11	1000Ω	½	77262	BTS-1000	AM Ant. Loading
R12	4.7 Meg	½	77272	BTS-4.7 Meg	AVC Network
R13	1 Meg	½	77218	BTS-1 Meg	AVC Network
R14	220KΩ	½	77216	BTS-220K	AVC Network
R15	33KΩ	½	77267	BTS-33K	AM RF Screen
R16	470Ω	½	77261	BTS-470	Decoupling
R17	1000Ω	½	77262	BTS-1000	Decoupling
R18	4700Ω	½	77211	BTS-4700	Decoupling See Note
R19	1000Ω	½	77262	BTS-1000	Decoupling See Note
R20	220KΩ	½	77216	BTS-220K	AM Converter Grid See Note
R21	22KΩ	½	77266	BTS-22K	AM Osc. Grid
R22	10KΩ	2	77013	BT-2-10K	AM Osc. Anode
R23	100KΩ	½	77214	BTS-100K	AVC Network
R24	33KΩ	½	77267	BTS-33K	2nd IF Screen
R25	1000Ω	½	77262	BTS-1000	2nd IF Decoupling
R26	2.2 Meg	½	77270	BTS-2.2 Meg	AVC Network
R27	47KΩ	½	77213	BTS-47K	Diode Filter
R28	470KΩ	½	77217	BTS-470K	Diode Load
R29	47KΩ	½	77213	BTS-47K	De-emphasis
R30	220KΩ	½	77216	BTS-220K	AVC Network
R31	33KΩ	½	77267	BTS-33K	FM Det. Load
R32	33KΩ	½	77267	BTS-33K	FM Det. Load
R33	10KΩ	½	77212	BTS-10K	Phono Shunt Note 1
R34	3.3 Meg	½	77207	BTS-3.3 Meg	Phono Pre Amp. Grid Note 1
R35	100KΩ	½	77214	BTS-100K	Bias Network Note 1
R36	3.3 Meg	½	77207	BTS-3.3 Meg	Phono Pre Amp. Grid Note 1
R37	33KΩ	½	77267	BTS-33K	Decoupling Note 1
R38	33KΩ	½	77267	BTS-33K	Decoupling Note 1
R39	100KΩ	½	77214	BTS-100K	Phono Pre Amp. Plate Note 1
R40	100KΩ	½	77214	BTS-100K	Phono Pre Amp. Plate Note 1
R41	220KΩ	½	77216	BTS-220K	Tone Compensation Note 1
R42	68KΩ	½	77305	BTS-68K	Tone Compensation Note 1
R43	100KΩ	½	77214	BTS-100K	Tone Compensation Note 1

DATE 7/49 4913-3 SET #65 FOLDER 3

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CAPEHART PART No.	REPLACEMENT DATA MEISSNER PART No.	
L2	FM Dipole Ant.	0Ω		11325		
L3	FM Ant.Coil	0Ω		38690		
L4	Fil. Choke	.1Ω		38661		
L5	RF Plate Choke	.1Ω		38661		
L6	FM RF Coil	0Ω		38691		
L7	FM Osc.Coil	0Ω		38692		
L8	Fil. Choke	.1Ω		38661		
L9	FM 1st IF	.2Ω	.2Ω	38824		
L10	Fil. Choke	.1Ω		38661		
L11	FM 2nd IF	.2Ω	.2Ω	38825		
L12	Fil. Choke	.1Ω		38661		
L13	Ratio Det.	1.5Ω	0Ω	38826		
L14	AM Loop Ant	0Ω				
L15	AM Loop Loading Coil	2Ω		38805		
L16	AM RF Coil	1.2Ω	3.5Ω	38913		
L17	AM Osc.Coil	.5Ω	3Ω	38694	14-1060	
L18	AM 1st IF	8.5Ω	8.5Ω	38822		
L19	AM 2nd IF	9Ω	9Ω	38823		
L20	Wave Trap			38484		Used In Early N4 Series.

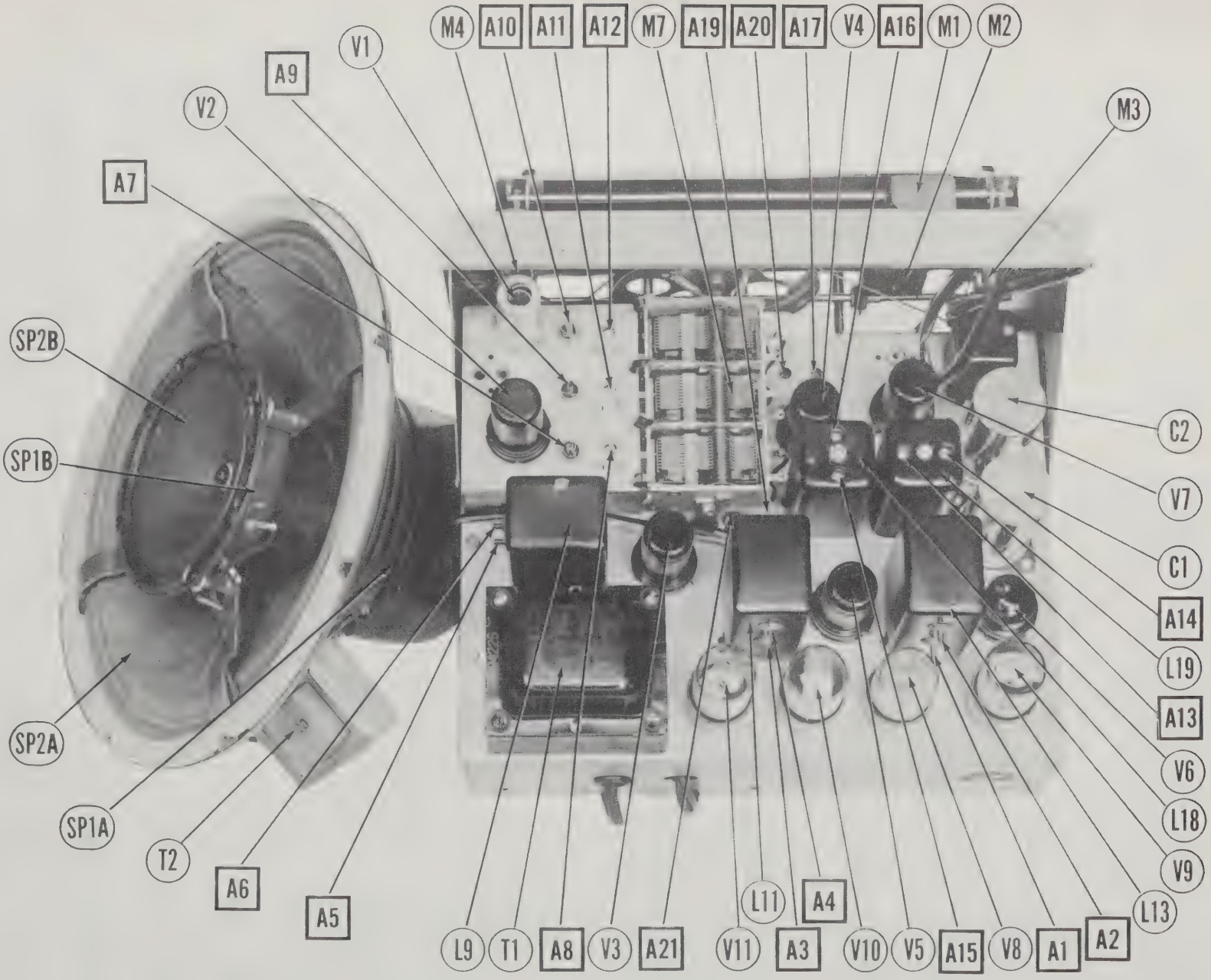
DIAL LIGHTS

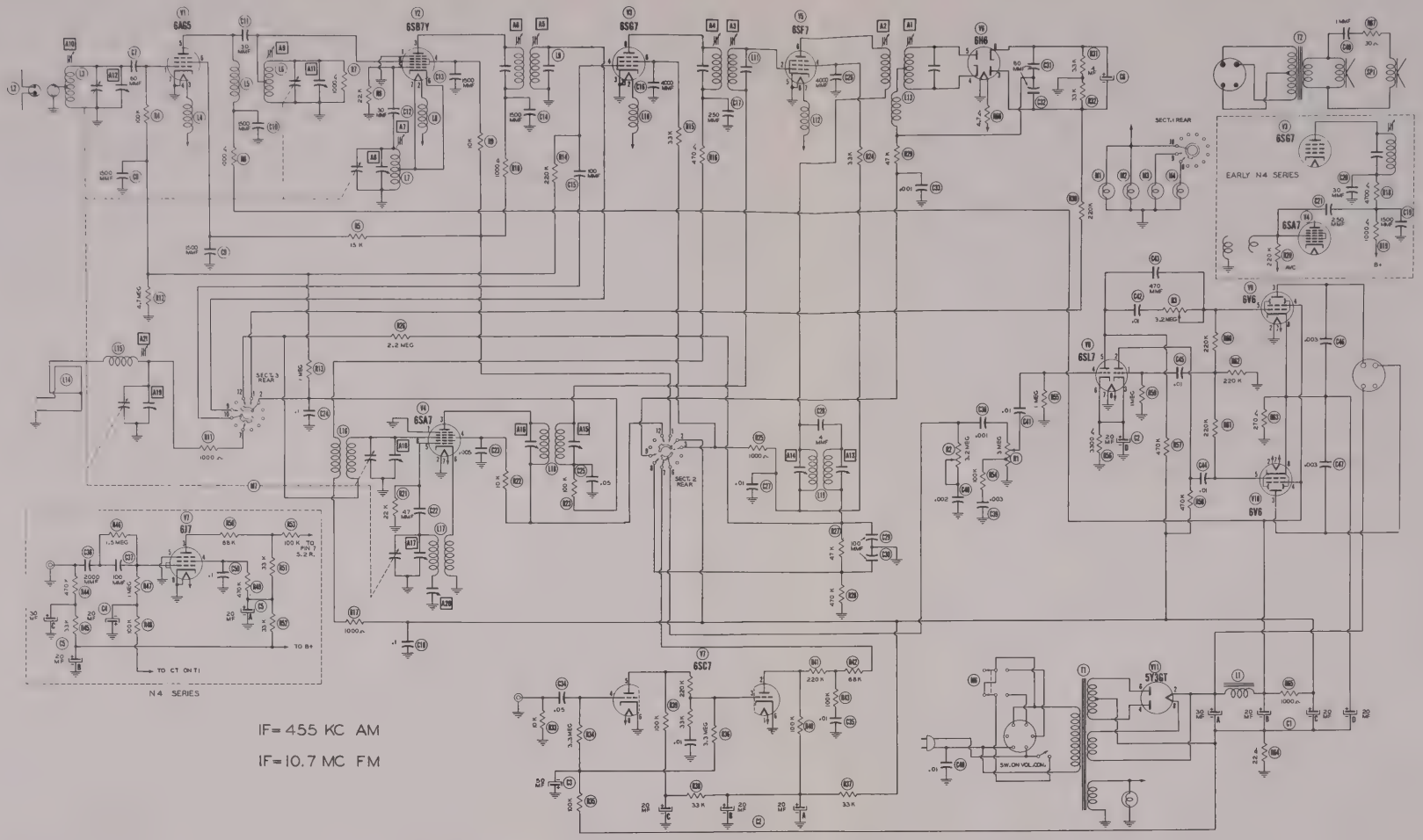
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CAPEHART PART No.		NOTES
M1	Bayonet	6-8V	0.25A	Blue	42185		Type #44
M2	Bayonet	6-8V	0.25A	Blue	42185		Type #44
M3	Bayonet	6-8V	0.25A	Blue	42185		Type #44
M4	Bayonet	6-8V	0.25A	Blue	42185		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	CAPEHART PART No.	NOTES
M5	Switch	90223	Band
M6	Switch	90219	Phono AC
M7A	3 Gang Var. Cap.	26275	(33-472MMF) Each Section
B	2 Gang Var. Cap.	26237	Used In Early N4 Series
A8	Trimmer	26231	FM Osc. Adj.
A11	Trimmer	26231	FM RF Adj.
A12	Trimmer	26231	FM Ant. Adj.
A17, A20	Dual Trimmer	26240	AM Osc. Adj. / AM Osc. Adj. (Padder)
A18	Trimmer	26036	AM RF Adj.
A19	Trimmer	26023	AM Ant. Adj.
	Dial Scale	13807	Glass
	Dial Pointer	13631	

CAPEHART MODELS
19N4, 21P4, 24N4, 24P4, 26N4,
29P4, 30P4, 31N4, 31P4, 114N4, 116N4,
116P4, 118P4


M4
A10
A11
A12
M7
A19
A20
A17
V4
A16
M1
M2
V1
A9
V2
M3
A7
SP2B
SP1B
C2
V7
C1
A14
L19
A13
V6
L18
V9
L13
A2
A1
V8
A15
V5
V10
A3
A4
L11
V11
A21
V3
A8
T1
L9
A5
A6
T2
SP1A
SP2A



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6AG5	-.6VDC	0V	6.3VAC	0V	240VDC	145VDC	0V	
V2	6SB7Y	0V	6.3VAC	200VDC	100VDC	-3.8VDC	0V	0V	
V3	6SG7	0V	6.3VAC	0V	-.6VDC	0V	125VDC	0V	210VDC
V4	6SA7	0V	0V	225VDC	115VDC	-4.5VDC	0V	6.3VAC	-1VDC
V5	6SF7	0V	-.3VDC	0V	115VDC	-.5VDC	205VDC	0V	6.3VAC
V6	6H6	0V	0V	-.1VDC	0V	0V	.2V	6.3VAC	.1VDC
V7	6SC7	0V	170VDC	-.5VDC	-.5VDC	165VDC	0V	6.3VAC	0V
V8	6SL7GT	0V	90VDC	1.5VDC	0V	96VDC	1.5VDC	0V	6.3VAC
V9	6V6GT	0V	6.3VAC	280VDC	280VDC	0V	0V	0V	16VDC
V10	6V6GT	0V	6.3VAC	280VDC	260VDC	0V	0V	0V	16VDC
V11	5Y3GT	0V	280VDC	0V	295VAC	860VDC	280VAC	0V	280VDC

TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6AG5	1 Meg	0Ω	.5Ω	0Ω	*1.2KΩ	*19KΩ	0Ω	
V2	6SB7Y	0Ω	.5Ω	*2.5KΩ	*11KΩ	22KΩ	0Ω	0Ω	
V3	6SG7	0Ω	.5Ω	0Ω	1.2 Meg	0Ω	*30KΩ	0Ω	*3KΩ
V4	6SA7	0Ω	0Ω	*1.3KΩ	*11KΩ	22KΩ	.5Ω	.8Ω	2 Meg
V5	6SF7	0Ω	2 Meg	0Ω	*85KΩ	470KΩ	2.5KΩ	0Ω	.5Ω
V6	6H6	0Ω	.5Ω	33KΩ	1MF	1MF	1MF	0Ω	33KΩ
V7	6SC7	0Ω	*150KΩ	3.3 Meg	3.3 Meg	*180KΩ	1KΩ	0Ω	0Ω
V8	6SL7GT	1 Meg	*500KΩ	1.3MΩ	1 Meg	*470KΩ	1.3KΩ	0Ω	.2Ω
V9	6V6GT	0Ω	.2Ω	*170Ω	*450Ω	640KΩ	250KΩ	0Ω	270Ω
V10	6V6GT	0Ω	.3Ω	*190Ω	*450Ω	640KΩ	3.3KΩ	0Ω	270Ω
V11	5Y3GT	0Ω	50KΩ	24Ω	12Ω	35KΩ	12Ω	1MF	50KΩ

§ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.
*Measured From Pin 2 Of V11.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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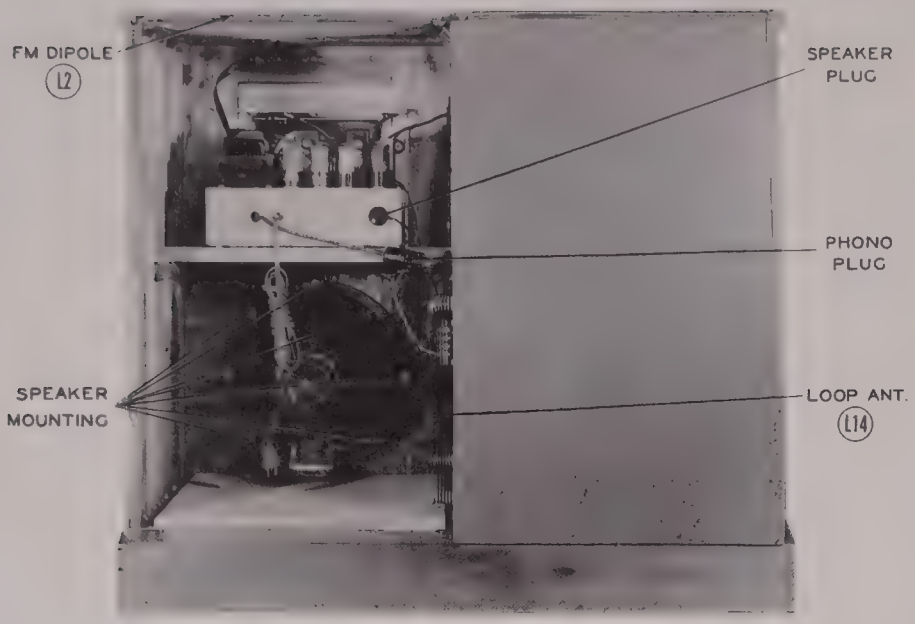
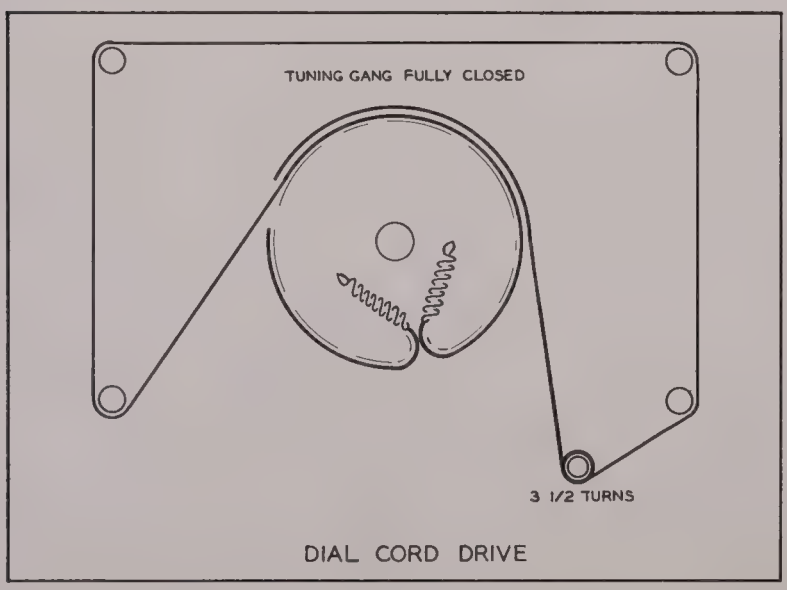


DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type control knobs.
2. Disconnect phono motor plug and remove speaker plug from rear of chassis.
3. Remove FM antenna plug from sub-chassis and remove AM antenna leads from loop.
4. Remove phono pick-up plug from front of chassis.
5. Remove four 3/8" hex nuts from front of chassis. Remove chassis by pulling out rear.
6. Remove six 1/4" hex head metal screws holding chassis bottom cover. Remove cover.
7. Remove four wood screws and four 3/8" hex nuts holding speaker. (Note: Output transformer must be removed from speaker to remove bottom wood screw). Remove speaker.



DIAL CORD DRIVE

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

FM Alignment should be completed before AM Alignment is attempted.
To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Connect synchronized sweep voltage from signal generator to scope horizontal input. If signal generator does not have provision for this, the sweep voltage may be taken from the power line. There may be some phase shift encountered between sweep voltage source and scope resulting in a double trace pattern. If provision is made for this in the scope rotate phase control until the two curves coincide . If no provision is made for this, the same thing may be accomplished by inserting a cap of suitable value(.01 to .1MFD) in series with the horizontal sweep input.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	3300 MMFD	High side to pin 4 (Grid) of 6SG7. Low side to chassis.	10.7MC (Freq.Mod)	FM	Tuning cap fully open	Vertical input to Point (A) Ground to chassis.	A1,A2, A3,A4	Disconnect 4MFD cap C6 from point A. Turn A1 fully counter-clockwise. Adjust A2 for pattern per Fig. 1. Adjust A1 for pattern per Fig 2. Turn A3 fully counter-clockwise. Adjust A4 for pattern per Fig 1. Adjust A3 for pattern per Fig 2.
2.	3300 MMFD	High side to pin 8 (Grid) of 6SB7Y. Low side to chassis.	"	"	"	"	A5,A6	Turn A5 fully counter-clockwise. Adjust A6 for pattern per Fig 1. Adjust A5 for pattern per Fig 3. Move scope lead to point B. If pattern is not similar to Fig 4. repeat steps 1 and 2. Continue with FM-RF Alignment in step 4.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

If VTVM is not available, a 20,000Ω/ volt DC voltmeter may be used.
Attenuate output of signal generator to maintain readable deflection on VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	3300 MMFD	High side to pin 4 (Grid) of 6SG7. Low side to chassis.	10.7MC (Unmod.)	FM	Tuning cap fully open	DC Probe to Point (A) Common to chassis.	A2,A3, A4	Turn A1 fully counter-clockwise. Adjust A2,A3 and A4 for maximum deflection.
2.	3300 MMFD	High side to pin 8 (Grid) of 6SB7Y. Low side to chassis.	"	"	"	"	A5,A6	Adjust for maximum deflection.
3.	3300 MMFD	"	"	"	"	DC Probe to Point (B) Common to chassis.	A1	Adjust for minimum deflection. Continue with FM-RF Alignment in step 4.

FM RF ALIGNMENT

If VTVM is not available, a 20,000Ω/volt DC voltmeter may be used.
Attenuate output of signal generator to maintain readable deflection on VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	300Ω carbon res.	High side to small pin of FM Ant. socket. Low side to chassis.	87.5MC (Unmod.)	FM	Tuning cap fully closed	DC Probe to Point (A) Common to chassis.	A7	Adjust for maximum deflection.
5.	300Ω carbon res.	"	108.5MC (Unmod.)	"	Tuning cap fully open	"	A8	Adjust for maximum deflection. Repeat steps 4 and 5 until no further improvement can be made.
6.	300Ω carbon res.	"	92MC (Unmod)	"	Tune for maximum deflection.	"	A9, A10	Adjust for maximum deflection.
7.	300Ω carbon res.	"	105MC (Unmod)	"	"	"	A11, A12	Rock tuning cap and adjust for maximum output. Repeat steps 6 and 7 until no further improvement can be made.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
8.	.1MFD	High side to pin 8 (Grid) of 6SA7. Low side to chassis.	455KC	BC	Tuning cap fully open	Across voice coil	A13, A14, A15, A16	Adjust for maximum output.
9.	200MMFD	High side to Ext. antenna. Low side to chassis.	1600KC	"	1600KC	"	A17	" " " " "
10.	200MMFD	"	1500KC	"	Tune for maximum output.	"	A18, A19	" " " "
11.	200MMFD	"	600KC	"	"	"	A20	Rock tuning cap and adjust for maximum output.
12.	200MMFD	"	"	"	"	"	A21	Adjust for maximum output. Repeat steps 9 thru 11 until no further improvement can be made.

FIG. 1

FIG. 2

FIG. 3

FIG. 4

CHALLENGER MODEL CD6

TRADE NAME	Challenger, Model CD6
MANUFACTURER	Challenger Amplifier Co., 663 Broadway, New York 12, N.Y.
TYPE SET	Battery Operated Audio Amplifier.
TUBES (FOUR)	Types 6SF5 MIC. Pre Amp., 6SF5 AF Amp., 6L6GA Power Output, 6X5GT Rectifier.
POWER SUPPLY	6 Volt Storage Battery RATING 6 Amp. @ 6 Volts DC
TUNING RANGE—BROADCAST	

OUTPUT: A speaker having its own field supply or PM type should be used. Connect the voice coil to the five prong plug and insert it into the socket provided on the front panel. The output impedance is determined by the prongs selected. See schematic diagram.

CONTROLS: Master Switch-this switch controls the power fed into the amplifier. In the OFF position there is no battery drain.

Standby-a standby socket provides standby operation. When not used, a shorting plug (supplied) should be inserted in the socket. A switch mounted on the microphone may be wired to the plug (first remove jumper). (In standby operation, there is no high voltage in the amplifier, only filament power. The battery drain is decreased to a value of 2.1 amperes.)

NOTES: To replace a faulty vibrator, it is merely necessary to remove it through the front panel.

To replace a tube, remove the four screws that hold the front panel to the metal enclosure.

To replace the fuse, merely push in and twist to the left the bayonet type fuse holder on the battery cord.

CHALLENGER
MODEL CD6

CHALLENGER
MODEL CD6

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

CHALLENGER MODEL CD6

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		CHALLENGER PART No.	STANDARD REPLACEMENT		
V1	MIC. Pre Amp.	6SF5	6SF5	6AB	
V2	AF Amp.	6SF5	6SF5	6AB	
V3	Power Output	6L6GA	6L6GA	7AC	
V4	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CHALLENGER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	5	450		AF2222J	UP1111		Dy-4x10	EL-410	Filter
B	5	450			45		-450		Filter
C	5	450							Filter
D	5	450							Decoupling
C2	10	25		PRS25/10	BR102A		M-10-25	TA-10	Output Cath. Bypass
C3	10	25		PRS25/10	BR102A		M-10-25	TA-10	AF Cath. Bypass
C4	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C5	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C6	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C7	.02	1200		P1688-02	GT16S2		STM-16 -02	MB-12	Buffer
C8	.25	200		P488-25	GT2P25		ST-2-25	TC-2	Hash Filter

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	CHALLENGER PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	500KΩ	½	V202	DB-133	M-60-Z	Mike control
B	Shaft		Not Req.	A	Not Req.	Attach to R1A per instructions

RESISTORS

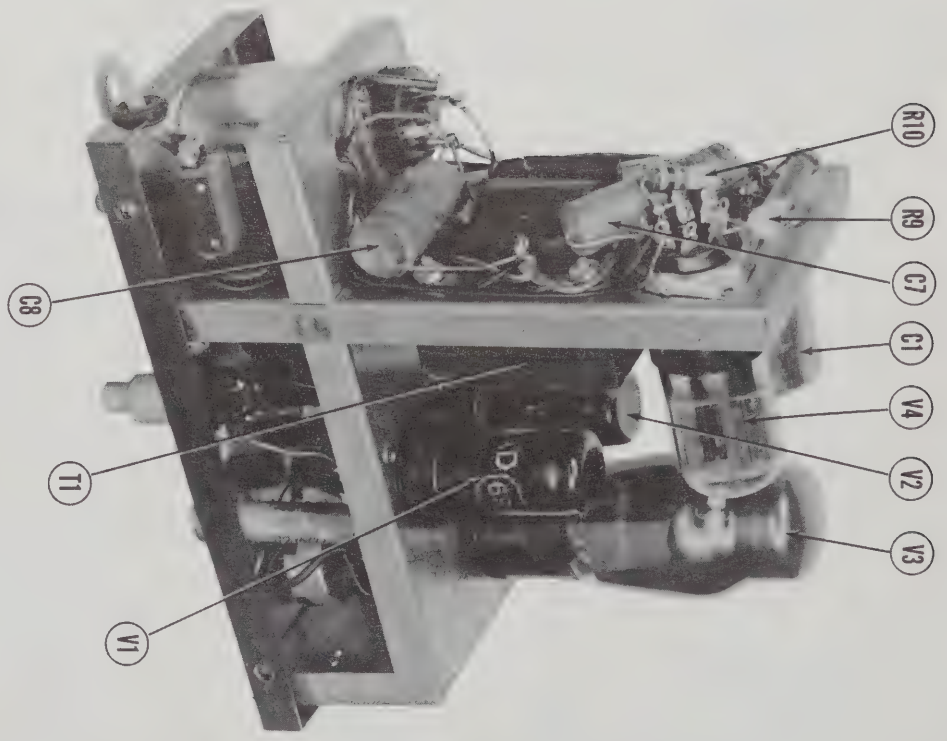
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CHALLENGER PART No.	IRC PART No.	
R2	3.3 Meg	½		BTS-3.3 Meg	Pre Amp. Grid
R3	330KΩ	½		BTS-330K	Pre Amp. Plate
R4	4700Ω	½		BTS-4700	AF Cathode
R5	220KΩ	½		BTS-220K	AF Plate
R6	50KΩ	½		BTS-47K	Filter
R7	220KΩ	½		BTS-220K	Output Grid
R8	220Ω	1		BW-1-220	Output Cathode
R9	25KΩ	1		BTA-27K	Filter
R10	10KΩ	1		BTA-10K	Series Buffer

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	CHALLENGER PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	6VDC @ 3.7A	630VCT @ .052A			T-374-B	P-4062*	VT-4	P-2971*

*Mount Half-Shell Style

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CHALLENGER PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	3000Ω	4Ω 8Ω 15Ω	132Ω	.35Ω .46Ω .66Ω	T-267B	A-3849	RO-302	A-2902	

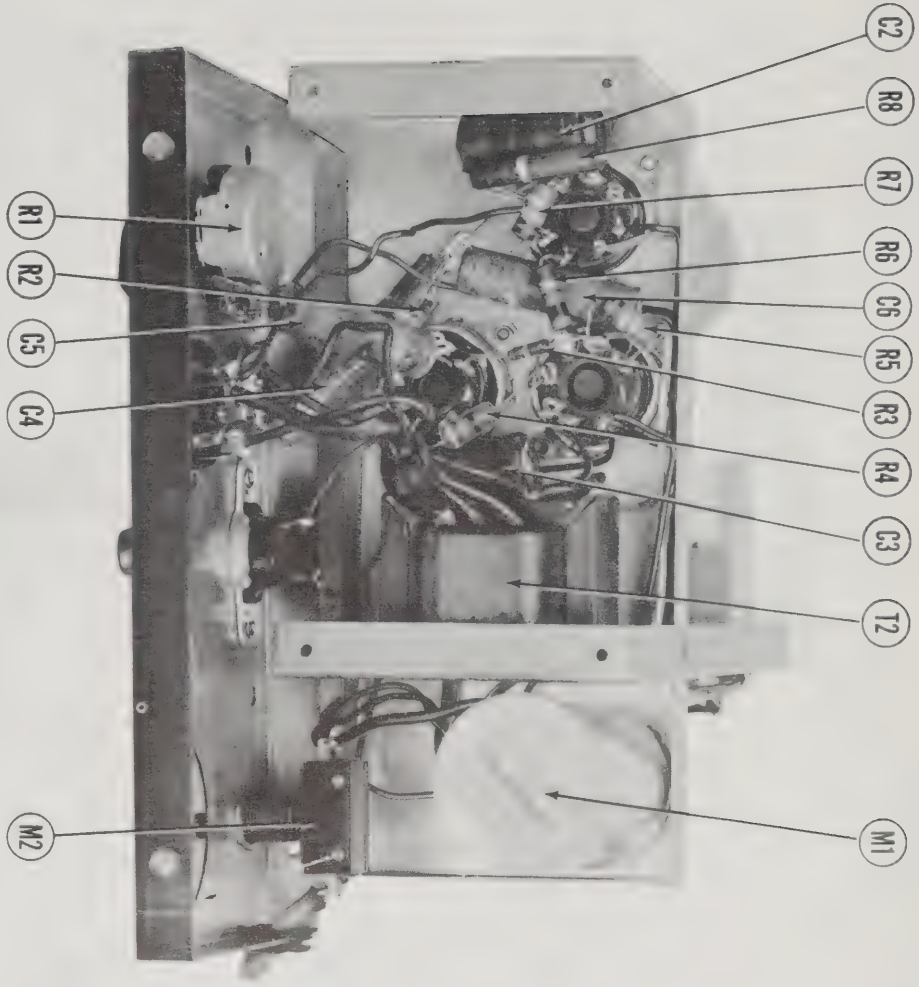
VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				CHALLENGER PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6V	115∿	H508	C-00	5301	

MISCELLANEOUS

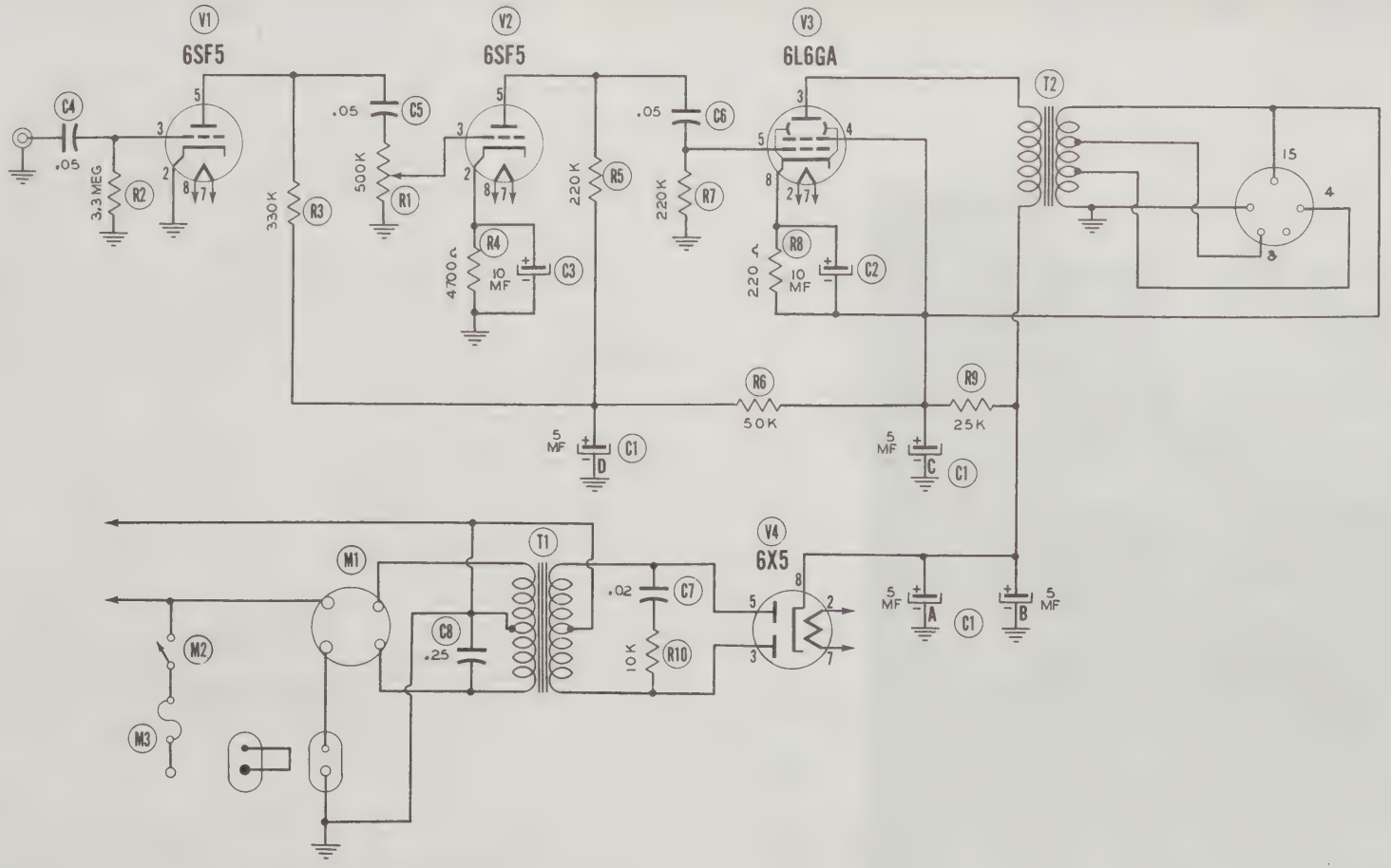
ITEM No.	PART NAME	CHALLENGER PART No.	NOTES
M2 M3	Switch Fuse		Power 10 Amp.

CHASSIS—BOTTOM VIEW



CHALLENGER MODEL CD6

CHALLENGER MODEL CD6



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SF5	0V	0V	-.6VDC	0V	65VDC	0V	6VDC	0V
V 2	6SF5	0V	.6VDC	-.6VDC	150VDC	105VDC	0V	6VDC	0V
V 3	6L6GA	0V	6VDC	290VDC	175VDC	.1VDC	0V	0V	12.5VDC
V 4	6X5GT	0V	6VDC	320VAC	320VAC	320VAC	320VAC	0V	290VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SF5	0Ω	0Ω	3.3 Meg	INF	*400KΩ	INF	.5Ω	0Ω
V 2	6SF5	0Ω	4.7KΩ	420KΩ*	*50KΩ	*300KΩ	INF	.5Ω	0Ω
V 3	6L6GA	INF	.5Ω	*130Ω	*25KΩ	220KΩ	.8Ω	0Ω	220Ω
V 4	6X5GT	INF	.5Ω	250Ω	280Ω	280Ω	10KΩ	0Ω	130KΩ

*Measured From Pin 8 Of V4

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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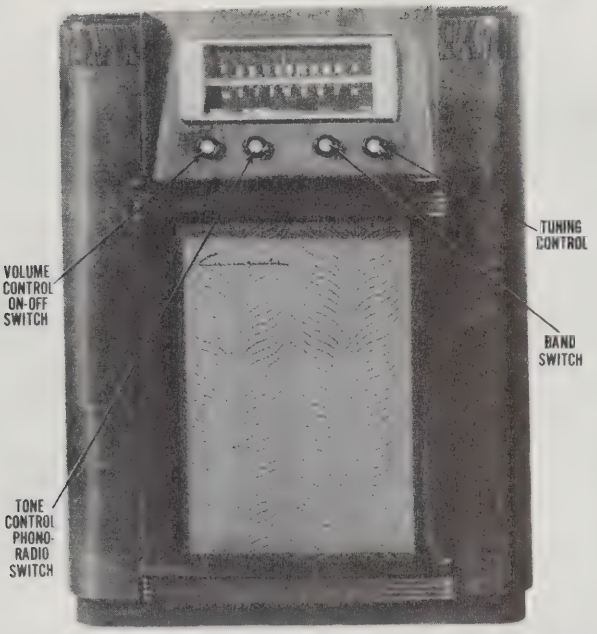
THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

4913-4

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at minimum, proper output load connected.

CORONADO MODEL
94RA1-43-7605A



CORONADO MODEL 94RA1-43-7605A

TRADE NAME	Coronado Model 94RA1-43-7605A
SUPPLIER	Gamble-Skogmo, Inc., 15 N. 8th St., Minneapolis, Minn.
TYPE SET	AC Operated Combination Phono-Radio, 2 Band Superheterodyne Receiver with Loop Ant.
TUBES (SIX)	Types 6SA7 Converter, 6SK7 IF Amp., 6SF7 IF-DET-AVC, 6SJ7 AF Amp., 6V6GT Power Output, 6X5GT Rectifier.
POWER SUPPLY	105-125 Volts AC — RATING .360 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC — **SHORT WAVE** 5.75-18.3MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 8 of 6SA7. Low side to chassis.	455KC	BC (Counter clock wise)	Tuning cap. fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output.
2.	50MMF	High side to ant lead. Low side to chassis.	1620KC	"	"	"	A5	"
3.	50MMF	"	1400KC	"	Tune for max. output.	"	A6	"
4.	50MMF	"	600KC	"	"	"	A7	Rock tuning cap. and adjust for max. output. Repeat Steps 2, 3 and 4 until no further improvement can be made.
5.	400Ω Carbon Res.	"	18.3MC	SW (Clock wise)	Tuning cap. fully open.	"	A8	Adjust for maximum output.
6.	400Ω Carbon Res.	"	16MC	"	Tune for Max. output.	"	A9	Rock tuning cap. and adjust for maximum output.
7.		Loop	1400KC	BC	Tune for max. output.	"	A6	Reassemble chassis in cabinet. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Set pointer at 1400KC mark on dial.

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PARTS LIST AND DESCRIPTIONS

CORONADO
MODEL 94RA1-43-7605A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	6SA7	6SA7	8R	
V2	IF Amp.	6SK7	6SK7	8N	
V3	IF-DET-AVC	6SF7	6SF7	7AZ	
V4	AF Amp.	6SJ7	6SJ7	8N	
V5	Power Output	6V6GT	6V6GT	7AC	
V6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	45X346		UP4445C		DY-314	EL-424*	◢Filter
B	40	450							■Filter
C	20	25							▲Cathode Bypass
C2	.004	800	H66402	P1088-004	GT16D4		STM-16 -004	MB-24	Output Plate Bypass
C3	.2	400		P488-22	GT4P2		ST-4-2	TC-2	RF Bypass Pur. Supply Note 1
C4	.01	400	D66103	P488-01	GT4S1	GT2-335-01	ST-4-01	TM-11	Audio Coupling
C5	.004	400	D66402	P688-004	GT6D4		ST-6-004	TM-24	Tone Compensation
C6	.025	400	D64253	P488-025	GT4S25		ST-6-03	TM-13	AF Plate Decoupling
C7	.1	400	D67104	P488-1	GT4P1		ST-4-1	TM-1	AF Screen Bypass
C8	470	500	47X467	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	AF Plate Bypass
C9	.005	400	D66502	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C10	.04	400	D64403	P488-04	GT6S4		ST-6-04	TM-14	Tone Compensation
C11	47	500	47X463	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Tone Compensation
C12A	50		47X112	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Diode RF Filter
B	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Diode RF Filter
C13	47	500	47X463	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	IF Coupling
C14	.04	400	D66403	P488-04	GT6S4		ST-6-04	TM-14	IF Screen Bypass
C15	.05	200	B66503	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C16	.04	400	D66403	P488-04	GT6S4		ST-6-04	TM-14	Conv. Screen Bypass
C17	.00475	180	46X289						SW Fixed Padder
C18	68	500	47X466	1469-00007	5W5Q7	GP1K-75	MOS.5-47	MS-47	Osc. Grid Cap
C19	.0005	200	B66501	1468-0005	GT6T5	GP2K-500	ST-6 -0005	TC-35	RF Coupling

*Parallel Sections To Obtain Desired Capacity.
Note 1 Not Used In All Models.

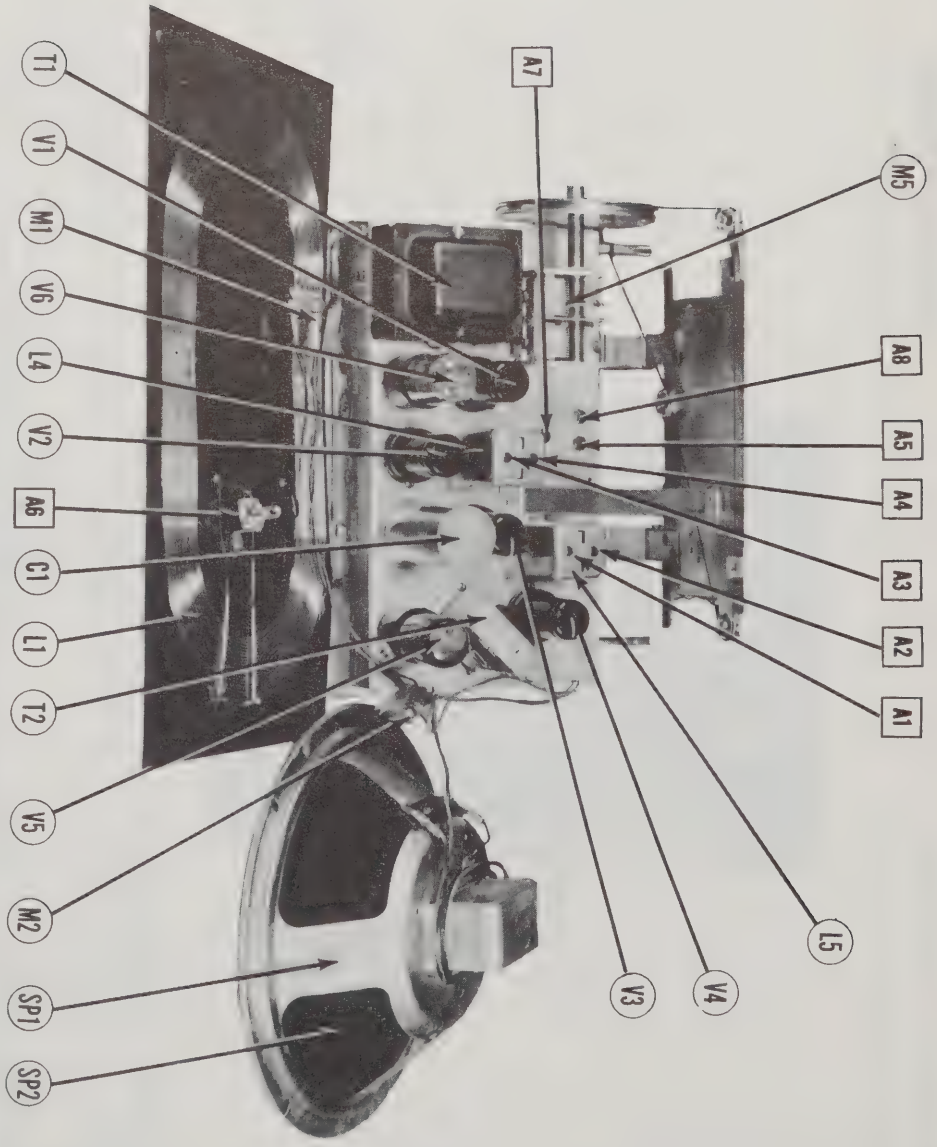
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½	36X358	D13-133X	AT-78	Volume control and switch
B	Shaft		Not Req.	E	KSS-3	Attach to R1A per instructions
C	Switch		Not Req.	41	SW-A	Attach to R1A per instructions
R2	3 Meg	½	40X276			Tone control and Radio-Phono Switch

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
R3	2.2 Meg	½	B85225	BTS-2.2 Meg	Converter Grid
R4	10Ω	½	B85100		Parasitic Suppressor Note 1
R5	39KΩ	½	B84393	BTS-39K	Oscillator Grid
R6	39KΩ	1	C84393	BTA-39K	Converter Screen
R7	39KΩ	1	C84393	BTA-39K	IF Screen
R8	2200Ω	½	B84222	BTS-2200	IF Plate Load
R9	1 Meg	½	B85105	BTS-1 Meg	IF Grid
R10	2.2 Meg	½	B85225	BTS-2.2 Meg	AVC Network
R11	47KΩ	½	B85473	BTS-47K	Diode Filter
R12	15KΩ	½	B84153	BTS-15K	Tone Compensation
R13	10 Meg	½	B85106	BTS-10 Meg	AF Grid
R14	470KΩ	½	B85474	BTS-470K	AF Screen

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R15	33KΩ	½	B84333	BTS-33K	AF Plate
R16	82KΩ	½	B84823	BTS-82K	AF Plate Decoupling
R17	470KΩ	½	B85474	BTS-470K	Output Grid
R18	270Ω	1	C84271	BW-1-270	Output Cathode
R19	1800Ω	2	D84182	BT-2-1800	Filter

Note 1 Not Used In All Models.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	CORONADO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .36A	485VCT .06A DC	6.35VAC @ 2.5A		53X282	P-6348	PH-50#	P-3048#

#Add Series Resistor To Reduce Plate Voltage.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	600Ω	3.7Ω	475Ω	1.1Ω	51X134	A-3849	R-8+	A-2902	‡Drill New Mtg. Hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V.C. IMP.	CORONADO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.7Ω	12A476	ST-119† P10-T	10A31	†Replace output transformer to match 8Ω voice coil
SP2	CONE DIA.	V.C. DIA.				
	9-3/4"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	CORONADO PART No.	MEISSNER PART No.
L1	Loop Ant.	0Ω	.5Ω	26A474	
L2	SW Ant.	.01Ω	.01Ω	9A1917	14-1044
L3A	BC Osc.	.3Ω	5Ω	9A1918	
¶	SW Osc.	.1Ω	.01Ω		
L4	Input IF	21Ω	21Ω	9A1814	16-6658
L5	Output IF	20Ω	18Ω	9A1815	16-6660

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					CORONADO PART No.		
M1	Bayonet	6-8V	.15A	Brown	7A103		Type #47
M2	Bayonet	6-8V	.15A	Brown	7A103		Type #47

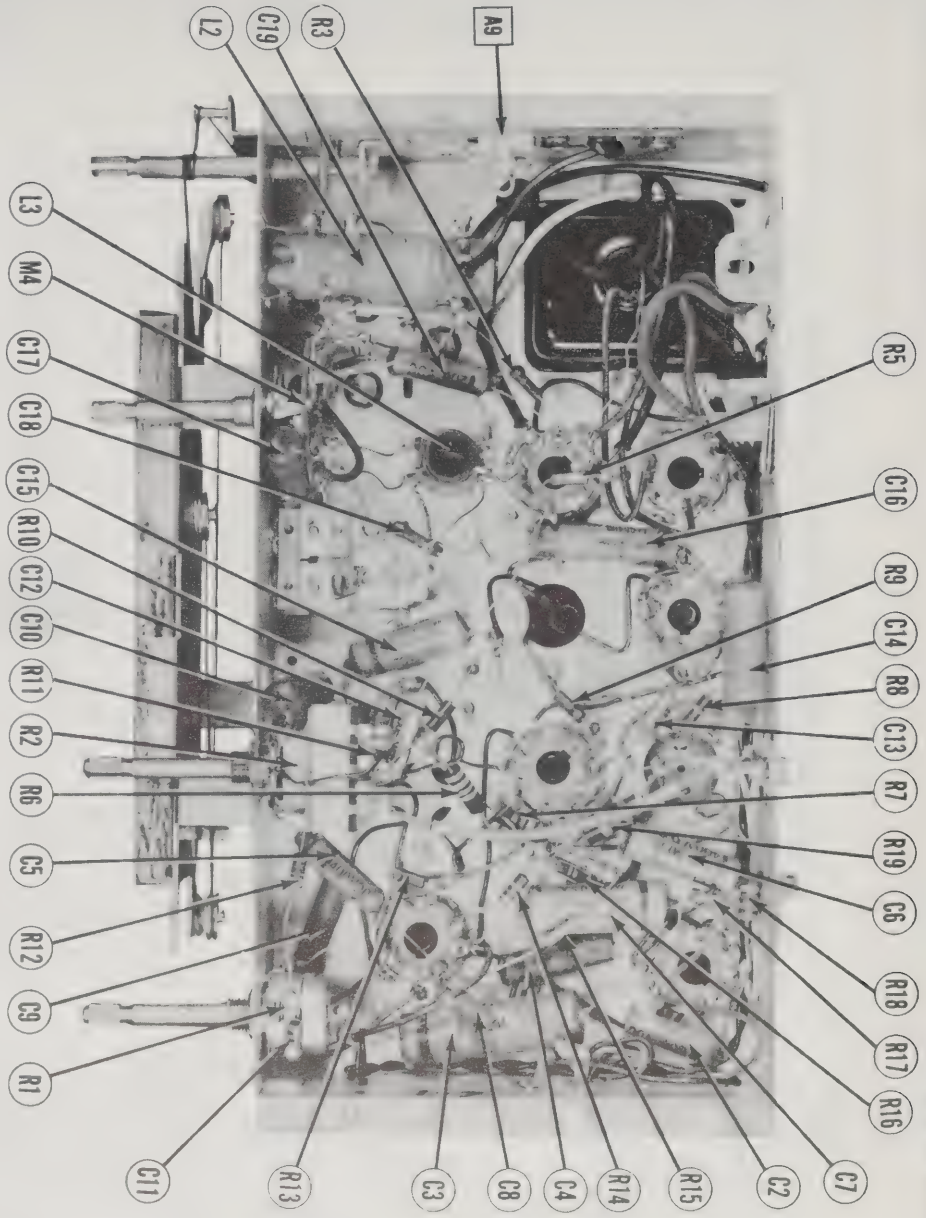
PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA		REMARKS
	CORONADO PART No.	ASTATIC PART No.	
M3		LT-3M	

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M4	Switch	2A372	Band
M5	2 Gang Var. Cap.	14A196	(14-474MMF, 12-402MMF)
A5	Dual Trimmer	17A109	BC Osc. Adj.
A8			SW Osc. Adj.
A6	Trimmer	17A235	BC Ant. Adj.
A7	Padder	17A155	BC Osc. Adj.
A9	Trimmer	17A164	SW Ant. Adj.
	Dial Pointer	15X245	
	Dial Glass	58X711	
	Knob	10A711	

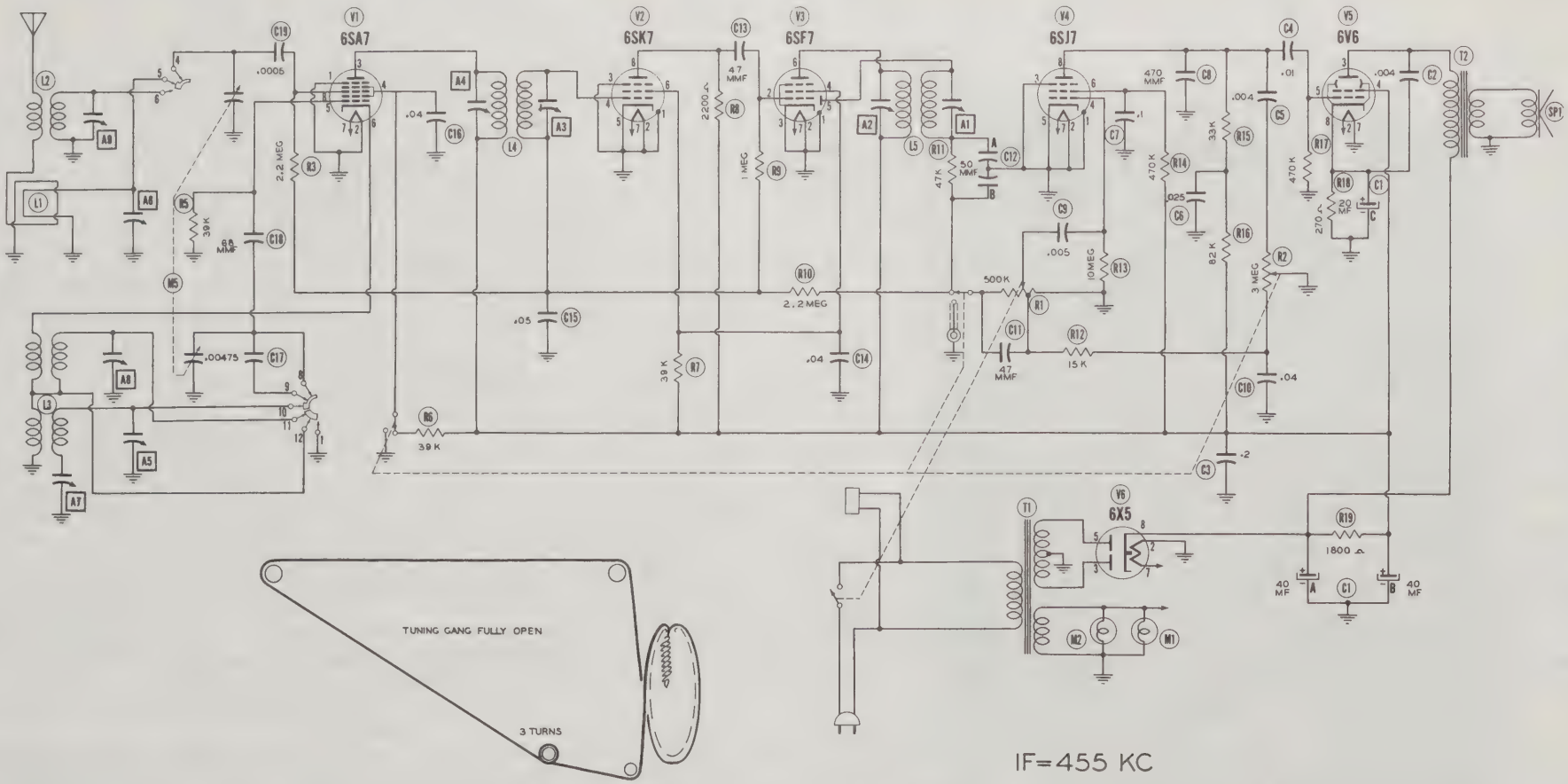
CHASSIS—BOTTOM VIEW



DATE 7/49 4913-5 SET #65 FOLDER #5

MODEL CORONADO 94RA1-43-7605A

MODEL 94RA1-43-7605A
CORONADO



DIAL CORD DRIVE

IF=455 KC

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.
RADIO-PHONO SWITCH IN PHONO POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SA7	0V	0V	220VDC	62VDC	§-10VDC	0V	6.4VAC	0V
V 2	6SK7	0V	0V	0V	-.15VDC	0V	66VDC	6.4VAC	205VDC
V 3	6SF7	0V	-.15VDC	0V	66VDC	-.2VDC	220VDC	6.4VAC	0V
V 4	6SJ7	0V	0V	0V	-.6VDC	0V	45VDC	6.4VAC	55VDC
V 5	6V6GT	0V	6.4VAC	260VDC	220VDC	0V	0V	0V	11VDC
V 6	6X5GT	0V	0V	240VAC	0V	240VAC	0V	6.4VAC	280VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SA7	0Ω	0Ω	*1800Ω	*41KΩ	39KΩ	.5Ω	.1Ω	5 Meg
V 2	6SK7	0Ω	0Ω	0Ω	3 Meg	0Ω	*41KΩ	.1Ω	*4KΩ
V 3	6SF7	0Ω	4 Meg	0Ω	*41KΩ	520KΩ	*1800Ω	.1Ω	0Ω
V 4	6SJ7	0Ω	0Ω	0Ω	10 Meg	0Ω	*470KΩ	.1Ω	*118KΩ
V 5	6V6GT	0Ω	.1Ω	*475Ω	*1800Ω	480KΩ	.4Ω	0Ω	270Ω
V 6	6X5GT	INF	0Ω	180Ω	INF	190Ω	INF	.1Ω	60KΩ

*Measured From Pin 8 Of V6

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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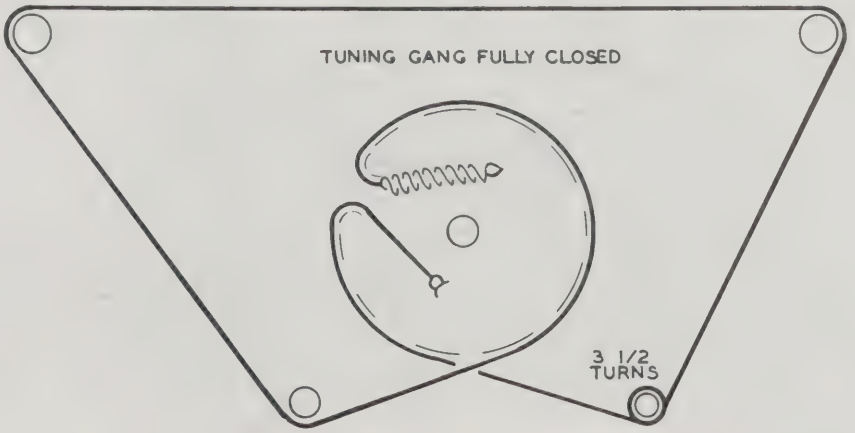
4913-5

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CROSLEY MODEL 9-214ML

TRADE NAME	Crosley, Models 9-214M, 9-214ML
MANUFACTURER	Crosley Corp., 1329 Arlington St., Cincinnati, Ohio
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(ELEVEN)	Types 6SG7 RF Amp., 6AC7 Mixer, 7F8 Oscillator, 6SG7 1st IF Amp., 6SG7 2nd IF Amp., 6AL5 Ratio Detector, 6SQ7 AM DET-AVC-AF, 6SQ7 Phase Inverter, (2) 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC — RATING .75 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC — FREQ. MOD. 88-108MC



DIAL CORD DRIVE

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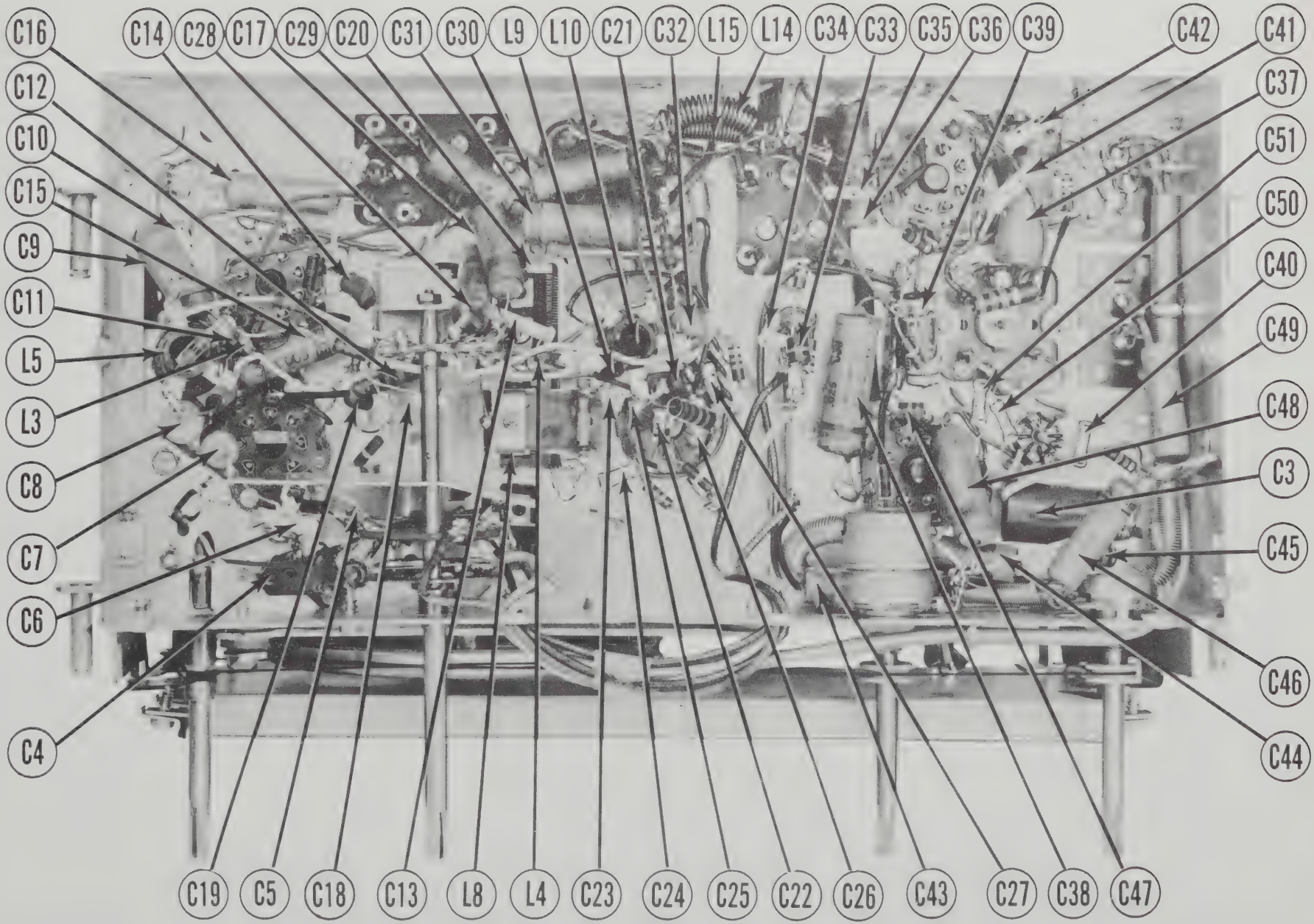
DATE 7/49 4913-6 SET #65 FOLDER #6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R22
R21
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R27
R25
R31
R26
A13
R28
R29
R1
A
R2
R30
R20
A15
M4
R3
R4
R9
R16
R15
R8
R7
R6
R5
A16

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6SG7	6SG7	8BK	
V2	Mixer	6AC7	6AC7	8N	
V3	Oscillator	7F8	7F8	8BW	
V4	1st IF Amp.	6SG7	6SG7	8BK	
V5	2nd IF Amp.	6SG7	6SG7	8BK	
V6	Ratio Detector	6AL5	6AL5	6BT	
V7	AM DET-AVC-AF	6SQ7	6SQ7	8Q	
V8	Phase Inverter	6SQ7	6SQ7	8Q	
V9	Power Output	6V6GT	6V6GT	7AC	
V10	Power Output	6V6GT	6V6GT	7AC	
V11	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	B-143089	AF862J4A	UP		DY-406	EL-424	▲Filter
B	20	450			43145C				■Filter
C	10	450							▲Filter
D	20	25							Output Cath. Bypass
C2	30	450	B-143062	PRS450/30	EZ3045		DH-30 -450	UT-30	Filter
C3	4	50	B-142958	PRS150/4	BR415		M-4-150	UT-41	Stabilizing Cap
C4	47		C-137727-31	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Ext. Ant. Coupling
C5	120		C-137727-12	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C6	1000		C-137727-12	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	AVC Filter
C7	.004	600	39001-11	P688-004	GT6D4	GP2M-005	ST-6-004	TM-24	RF Screen Bypass
C8	.01	600	39001-13	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	RF Decoupling
C9	.01	600	39001-13	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	RF Decoupling
C10	56		C-137727-45						Fixed Trimmer
C11	3.3		W-137398-5	1468-0000 05	5W5V5	NP0K-3	MO.5-55	MS-55	RF Coupling
C12	40		C-137727-73	1468-00004	5W5Q4	GP1K-50	MO.5-44	1FM-44	RF Coupling
C13	91		C-137727-20	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C14	100		C-137727-25	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C15	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Mixer Screen Bypass
C16	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Mixer Decoupling
C17	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Mixer Plate Decoupling
C18	5		C-137727-79	1468-0000 05	5W5V5	NP0K-5	MO.5-55	MS-55	Osc. Coupling
C19	16		C-137727-43			GP1K-15			Osc. Coupling
C20	5		W-137398-6	1469-0000 05	5R5V5	NP0K-5	MOS.5-55	MS-55	Fixed Trimmer
C21	47		C-137727-31	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C22	5		C-137727-79	1468-0000 05	5W5V5	NP0K-5	MO.5-55	MS-55	Osc. Feedback
C23	33		C-137727-53		5W5Q3	NP0L-33	MO.5-43	MS-43	Osc. Feedback
C24	33		C-137727-53		5W5Q3	NP0L-33	MO.5-43	MS-43	Osc. Grid Cap
C25	1000		C-137727-8	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Osc. Fil. Bypass
C26	1000		C-137727-8	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Osc. Fil. Bypass
C27	1000		C-137727-8	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Osc. Anode Bypass
C28	.05	200	39001-17	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C29	.01	200	39001-13	P488-01	GT2S1	GP2-335-01	ST-4-01	TM-11	AVC Filter
C30	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	1st IF Screen Bypass
C31	.01	600	39001-13	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	1st IF Decoupling
C32	.01	600	39001-13	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	RF Bypass
C33	50		B-143686-1	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Diode Filter
C34	1000		C-137727-8	1468-0001	1W5D1	GP2L-001	MW.5-21	1FM-21	AVC Filter
C35	1000		C-137727-8	1468-0001	1W5D1	GP2L-001	MW.5-21	1FM-21	2nd IF Grid Filter
C36	.02	200	39001-80	P488-02	GT2S2		ST-4-02	TM-12	2nd IF Cath. Bypass
C37	.025	600	39001-80	P688-025	GT6S25		ST-6-02	TM-12	2nd IF Screen Bypass
C38	.025	600	39001-80	P688-025	GT6S25		ST-6-02	TM-12	RF Bypass
C39	.002	600	39001-74	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	De-emphasis
C40	1000		C-137727-8	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Bypass
C41	5000		C-137727-38	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Fil. Bypass
C42	5000		C-137727-38	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Fil. Bypass
C43	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.
T1	117VAC @ .75A	650VAC CT @ .107A DC	5VAC @ 2A	6.6VAC @ 3.7A	135106	P-6013†	PV-100†*	P-2953†

†Add Series Resistor To Reduce Plate Voltage.
*Drill New Mounting Holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
T2	11KΩ CT	3.6Ω	650Ω CT	.5Ω	137001	A-3824	RO-110*	A-2904*	*Drill One New Mtg. Hole

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	FM Dipole Ant.	0Ω				
L2	FM Ant.Coil	0Ω		AB-143784		
L3	RF Plate Choke	.5Ω		AW-143752		
L4	FM RF Coil	0Ω		AW-143646		
L5	AM RF Coil	70Ω	7Ω	AW-143402	14-1057	
L6	Loop Ant.	0Ω		AW-144527		
L7	Loop Loading Coil	75Ω	2.3Ω	AW-143267	14-1056	
L8	FM Osc.Coil	0Ω		AC-143305		
L9	RF Plate Choke	2Ω		AW-143837		
L10	AM Osc.Coil	8Ω		AW-143945	14-1060	
L11A	AM 1st IF	7Ω	§7Ω	AC-143090		§Includes FM Sec. Winding
B	FM 1st IF	.5Ω				
L12A	AM 2nd IF	#7Ω		AC-143105		#Includes FM Pri. Winding. Cannot measure Sec. Winding.
B	FM 2nd IF		.5Ω			
L13	Ratio Det.	.8Ω	.2Ω	AC-143378		
L14	Fil. Choke	.1Ω		AW-143934		
L15	Fil. Choke	.1Ω		AW-143934		

SPEAKER

ITEM No.	RATINGS: FIELD	RATINGS: V.C. IMP.	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
SP1	PM	3.6Ω	138762-5	ST-120 MOD.P10-S‡	10A31	‡Replace output transformer to match 6-8Ω voice coil
	CONE DIA.	V.C. DIA.				
SP2	9-7/16"	1"				

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	0.15A	Brown	138437-1		Type #47
M2	Bayonet	6-8V	0.15A	Brown	138437-1		Type #47

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA CROSLEY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C44	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C45	33		B-143686-2	1468-00004	5W5Q3	NPOL-33	MO.5-43	1FM-44	Tone Comp.
C46	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Tone Comp.
C47	50		143686-1	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	AF Plate Bypass
C48	.01	600	39001-13	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Tone Comp.
C49	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C50	1000		C-137727-8	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	AF Fil. Bypass
C51	1000		C-137727-8	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	AF Fil. Bypass
C52	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C53	.05	600	39001-17	P688-05	GT6S5		ST-6-05	TM-15	Audio Coupling
C54	.003	600	39001-76	P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Output Plate Bypass
C55	.003	600	39001-76	P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Output Plate Bypass
C56	.2	200	39001-87	P488-22	GT2P25		ST-2-25	TC-2	Bias Filter

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CROSLEY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	2.5 Meg	½	39368-19	D18-139X		Volume control tapped @ 750KΩ
B	Shaft		39370-2	E		Attach to R1A per instructions
R2A	3 Meg	½	39368-22			Tone control
B	Shaft		39370-2			Attach to R2A per instructions
C	Switch		39369-1			Attach to R2A per instructions

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CROSLEY PART No.	IRC PART No.	IDENTIFICATION CODES
R3	1.5 Meg	½	39373-94	BTS-1.5 Meg	AVC Network
R4	100KΩ	½	39373-74	BTS-100K	AVC Network
R5	1 Meg	½	39373-92	BTS-1 Meg	RF Grid
R6	68KΩ	½	39373-71	BTS-68K	RF Screen Bleeder
R7	22KΩ	1	39374-129	BTA-22K	RF Screen Decoupling
R8	1000Ω	½	39373-33	BTS-1000	RF Decoupling
R9	220Ω	½	39373-19	BW-½-220	RF Decoupling
R10	68KΩ	½	39374-47	BTS-68K	FM Osc. Grid
R11	100KΩ	½	39373-74	BTS-100K	AM Osc. Grid
R12	22K	1	39374-129	BTA-22K	AM Osc. Plate
R13	1 Meg	½	39373-92	BTS-1 Meg	AVC Network
R14	1 Meg	½	39373-92	BTS-1 Meg	Mixer Grid
R15	120KΩ	½	39374-50	BTS-120K	Mixer Screen
R16	2200Ω	½	39373-40	BTS-2200	Mixer Decoupling
R17	2200Ω	½	39373-40	BTS-2200	1st IF Plate Decoupling
R18	39KΩ	½	39374-44	BTS-39K	1st IF Screen Decoupling
R19	220Ω	½	39373-19	BW-½-220	Decoupling
R20	47KΩ	½	39373-67	BTS-47K	Diode Filter
R21	470KΩ	½	39373-87	BTS-470K	Diode Load
R22	47KΩ	½	39373-67	BTS-47K	AVC Network
R23	22KΩ	½	39374-41	BTS-22K	2nd IF Grid
R24	270Ω	½	39374-18		2nd IF Cathode
R25	39KΩ	½	39374-44	BTS-39K	2nd IF Bleeder
R26	33KΩ	1	39374-131	BTA-33K	2nd IF Decoupling
R27	39K	½	39374-44	BTS-39K	De-emphasis
R28	27K	½	39374-42	BTS-27K	Rat. Det. Diode Load
R29	68K	½	39373-71	BTS-68K	Tone Compensation
R30	10 Meg	½	39373-107	BTS-10 Meg	AF Grid
R31	220KΩ	½	39373-80	BTS-220K	AF Plate
R32	10 Meg	½	39373-107	BTS-10 Meg	Phase Inv. Grid
R33	220KΩ	½	39374-53	BTS-220K	Phase Inv. Plate
R34	330KΩ	½	39374-55	BTS-330K	Output Grid
R35	330KΩ	½	39374-55	BTS-330K	Output Grid
R36	100KΩ	½	39374-49	BTS-100K	Output Grid
R37	220Ω	2	39374-193	BW-2-220	Output Cathode
R38	15Ω	½	39373-3	BW-½-15	Bias Network
R39	1 Meg	½	39373-92	BTS-1 Meg	Bias Network
R40A	700Ω	4	W-137021	AB-700	Filter
A	400Ω	4		AB-400	Filter
R41	1000Ω	2	39374-201	BT-2-1000	Filter
R42	220Ω	½	39373-19	BW-½-220	Decoupling

DATE 7/49 4913-6 SET #65 FOLDER #6

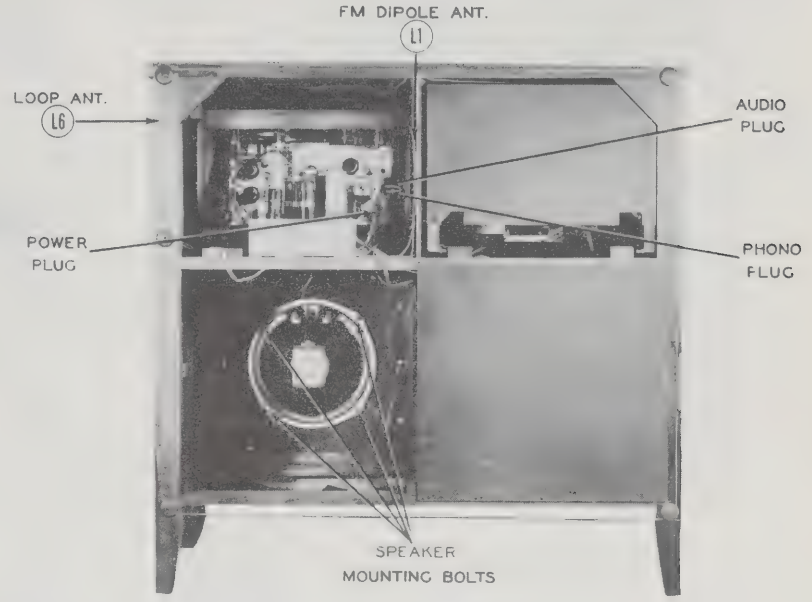
PARTS LIST AND DESCRIPTIONS (Continued)

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA CROSLEY PART No.	REPLACEMENT DATA ASTATIC PART No.	REMARKS
M3		LT3-D	

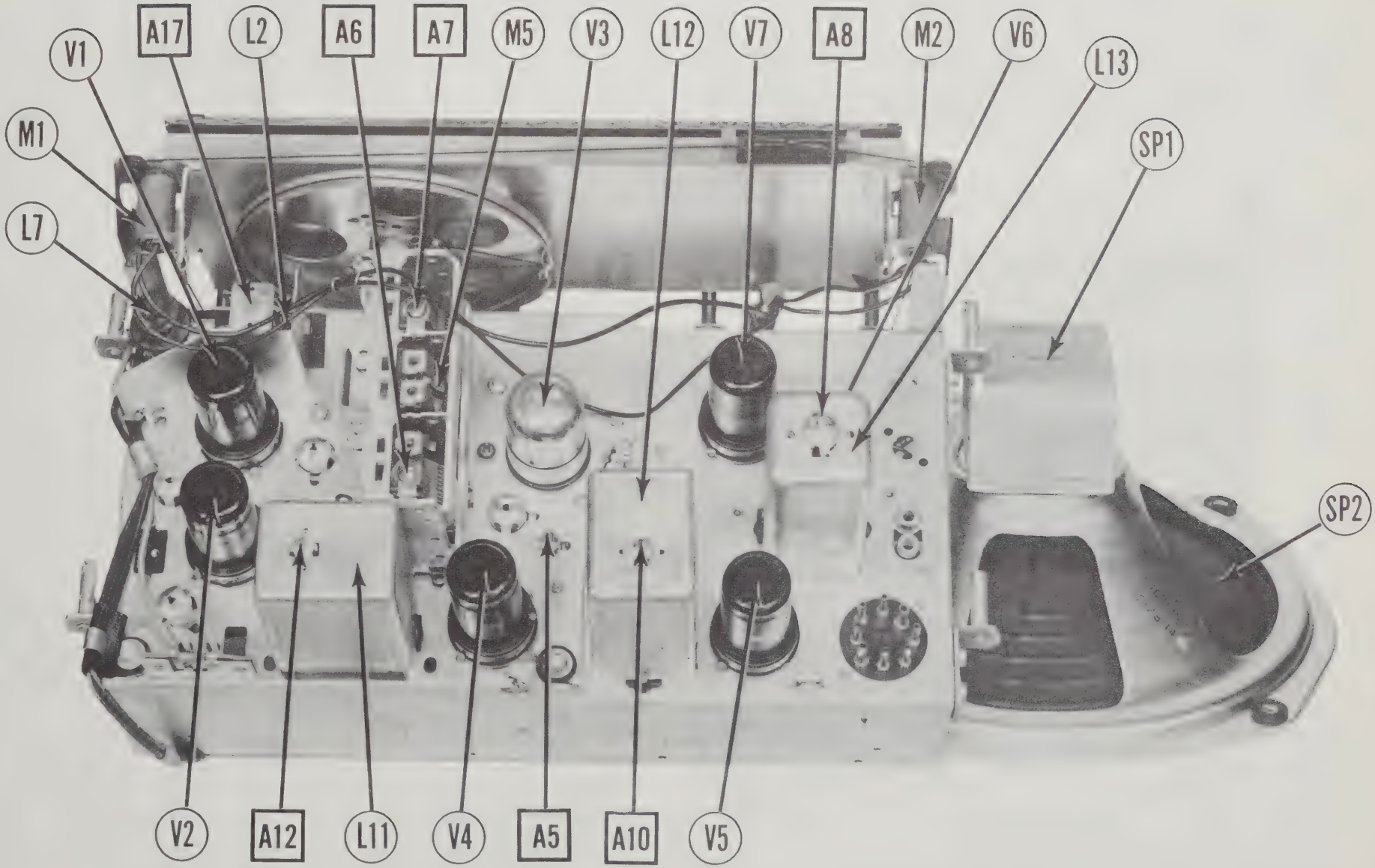
MISCELLANEOUS

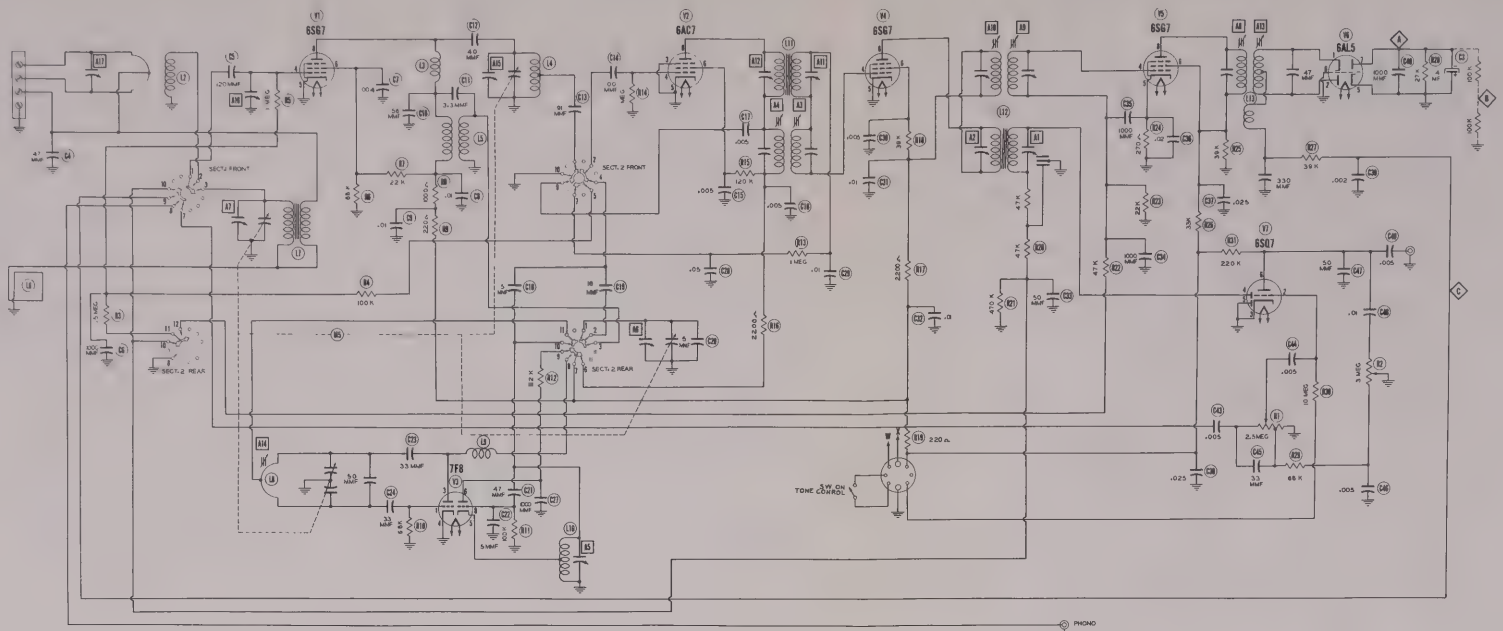
ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M4	Switch	B-142969	Band
M5	Tuning Gang	C-142848	(26-482MTF, 26-482MTF)
A5	Trimmer	W-143014	BC Osc. Adj.
A16	Trimmer	C-136327-43	FM Ant. Adj.
	Cabinet	R-144841	
	Dial Glass	C-144768	
	Knob	B-138576-6	3 Used
	Knob	B-143778	1 Used
	Dial Pointer	B-143769	



DISASSEMBLY INSTRUCTIONS

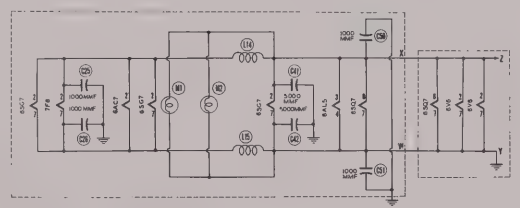
1. Remove four push-on type control knobs.
2. Disconnect phono motor plug and remove phono pick-up, audio plug and tuner chassis power plug from rear of tuner chassis. Remove speaker plugs from speaker.
3. Remove three 1/4" hex head screws holding output chassis. Remove output chassis.
4. Remove AM antenna leads from rear of chassis. Remove FM antenna leads from mounting strip at rear of cabinet.
5. Remove two phillips head wood screws holding FM antenna mounting strip. Remove mounting strip.
6. Remove one clip from each side of chassis. Pull down on chassis. When it is free remove chassis out back of cabinet.
7. Remove four 1/4" hex nuts holding speaker. Remove speaker.

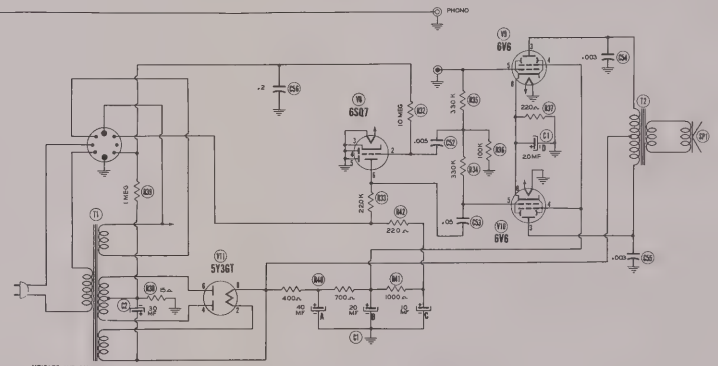

A17
L2
A6
A7
M5
V3
L12
V7
A8
M2
V6
L13
V1
M1
L7
SP1
SP2
V2
A12
L11
V4
A5
A10
V5



IF=455KC AM

IF=10.7 MC FM





VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	0V	6.3VAC	0V	-.7VDC	3V	100VDC	0V	195VDC
V 2	6AC7	0V	6.3VAC	0V	-.2VDC	3V	75VDC	0V	225VDC
#V3A	7F8	5-2VDC	6.3VAC	150VDC	0V	0V	4V	0V	0V
#V3B	7F8	-6VDC	6.3VAC	-1.2VDC	0V	0V	140VDC	0V	5-6VDC
V 4	6SG7	0V	6.3VAC	0V	-.6VDC	0V	85VLC	0V	190VDC
#V5	6SG7	0V	6.3VAC	1.1VDC	0V	1.1VDC	50V3C	0V	50VDC
#V6	6AL5	0V	-.8VDC	6.3VAC	0V	-0.8VDC	0v	-.8VDC	
V 7	6SQ7	0V	-.4VDC	Rft	.3VDC	0V	140VDC	0V	6.3VAC
V 8	6SQ7	0V	-.5VDC	0V	0V	0V	130VDC	0V	6.3VAC
V 9	6V6GT	0V	6.3VAC	300VDC	260VDC	.1VDC	0V	0V	15VDC
V 10	6V6GT	0V	6.3VAC	300VDC	260VDC	-V	0V	0V	15VDC
V 11	5Y3GT	0V	310VDC	-1.5VDC	320VAC	0V	320VAC	0V	310VDC

#TAKEN WITH VACUUM TUBE VOLTMETER

† VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SG7	0Ω	.2Ω	0Ω	3 Meg	0Ω	*.2ΩΩ	0Ω	*4KΩ
V 2	6AC7	0Ω	.2Ω	0Ω	1 Meg	0Ω	*.15ΩΩ	0Ω	*1.5KΩ
V 3	7F8	56KΩ	.2Ω	**7.5KΩ	0Ω	2Ω	*25KΩ	0Ω	100KΩ
V 4	6SG7	0Ω	.2Ω	0Ω	3 Meg	0Ω	*43KΩ	0Ω	*4.3KΩ
#V5	6SG7	0Ω	.2Ω	270Ω	22KΩ	270Ω	*27KΩ	0Ω	*27KΩ
#V6	6AL5	0Ω	27KΩ	.2Ω	0Ω	INF	0Ω	INF	
V 7	6SQ7	0Ω	1Ω Meg	0Ω	700KΩ	0Ω	*200KΩ	0Ω	.2Ω
V 8	6SQ7	0Ω	1Ω Meg	0Ω	0Ω	0Ω	*250KΩ	0Ω	.2Ω
V 9	6V6GT	INF	.2Ω	*340Ω	*1100Ω	400KΩ	110KΩ	0Ω	220Ω
V 10	6V6GT	INF	.2Ω	*310Ω	*1100Ω	400KΩ	INF	0Ω	220Ω
V 11	5Y3GT	INF	40KΩ	140	90Ω	.2Ω	65Ω	INF	40KΩ

**Measured From Pin 8 Of V11.
*Measure From Pin 8 Of V11.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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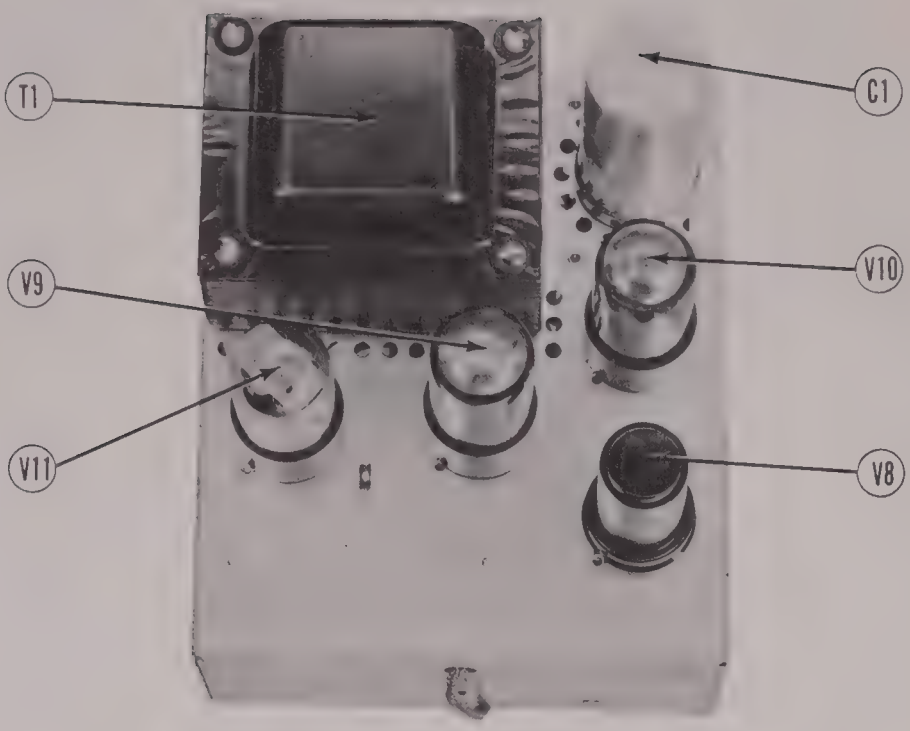
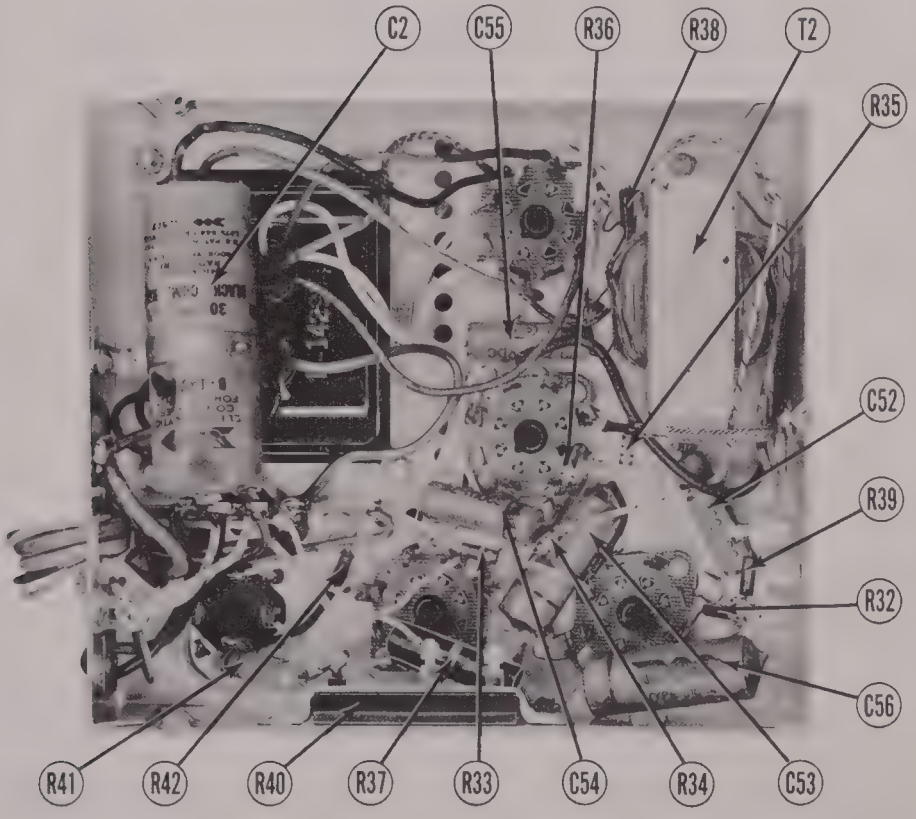

T1
C1
V9
V10
V11
V8


C2
C55
R36
R38
T2
R35
C52
R39
R32
C56
R41
R42
R40
R37
R33
C54
R34
C53

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning capacitor fully closed and set pointer at the edge of the clear glass section of the dial to the left of the low frequency end of the dial.

During alignment, the shorting link on the antenna terminal strip should be removed. Replace this link after aligning the receiver unless external antenna is to be used.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 4 (Grid) 6SG7 (V4). Low side to chassis.	455KC	AM	Tuning cap fully open	Across voice coil	A1,A2	Adjust for maximum output
2.	.01MFD	High side to rear AM stator of tuning cap. Low side to chassis.	"	"	"	"	A3,A4	" " " "
3.		Loop	1400KC	"	"	"	A5,A6 A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Before starting step 7, connect two matched (± 5%) 100KΩ resistors in series from pin 2 of 6AL5 (V6) to chassis. Connect common lead of VTMM to junction (Point B) of the two 100KΩ reisstors, Connect DC probe of VTVM to point C as indicated on schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	1000MMF	High side to pin 4 (Grid) 6SG7 (V5). Low side to chassis.	10.7MC	FM	Tuning cap fully closed	DC Probe to point (A) Common to chassis.	A8	Adjust for maximum deflection.
5.	1000MMF	High side to pin 4 (Grid) 6SG7 (V4). Low side to chassis.	"	"	"	"	A9, A10	" " " "
6.	1000MMF	High side to rear FM stator of tuning cap. Low side to chassis.	"	"	"	"	A11, A12	" " " "
7.	1000MMF	"	"	"	"	DC Probe to point (C) Common lead to point (B)	A13	Adjust for zero reading. A positive and negative reading are on either side of correct setting.

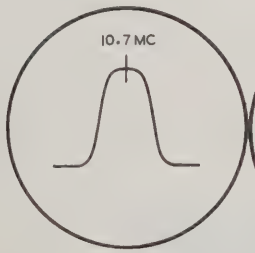


FIG. 1

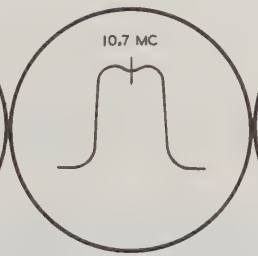


FIG. 2

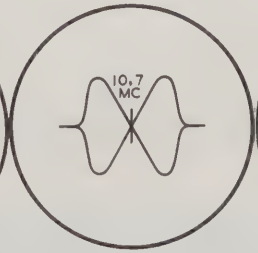


FIG. 3

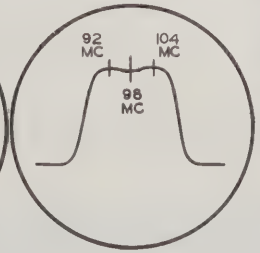


FIG. 4

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	BAND SWITCH POS.	CONNECT SCOPE	ADJUST	REMARKS
4.	1000MMF	High side to pin 4 (Grid) 6SG7 (V4). Low side to chassis.	10.7MC (450KC Sweep)	10.7MC	FM	Vert. Amp. to point (A) Low side to chassis.	A8, A9, A10	Disconnect stabilizer capacitor C3. Adjust A8, A9, A10 for maximum amplitude and symmetry as per Fig.1.
5.	1000MMF	High side to rear FM stator of tuning cap. Low side to chassis.	"	"	"	"	A11, A12	Adjust for maximum amplitude and symmetry as per Fig.2.
6.	1000MMF	"	"	"	"	Vert. Amp. to point (C) Low side to chassis.	A13	Reconnect stabilizer cap. C3. Adjust A13 so crossover occurs at center of pattern as per Fig. 3. Slightly retouch A8 for maximum amplitude and symmetry, if necessary. Continue with step 8.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	Two 39Ω carbon res.	Insert a 39Ω resistor in each lead of signal generator and connect across FM antenna terminals.	98MC	FM	98MC	DC Probe to point (A) Common to chassis.	A14	Adjust for maximum deflection.
9.	Two 39Ω carbon res.	"	104MC	"	104MC	"	A15	Rock tuning gang if necessary and adjust for maximum deflection.
10.	Two 39Ω carbon res.	"	92MC	"	92MC	"	L7	Compress or expand FM RF coil for maximum sensitivity. Check with tuning wand.
11.	Two 39Ω carbon res.	"	98MC	"	98MC	"	A16	Shunt FM antenna coil primary with 10Ω carbon resistor. Adjust A16 for maximum deflection.
12.	Two 39Ω carbon res.	"	"	"	"	"	A17	Move 10Ω shunt to secondary of FM antenna coil and adjust primary (A17) for maximum deflection.

FM INPUT RESPONSE CHECK

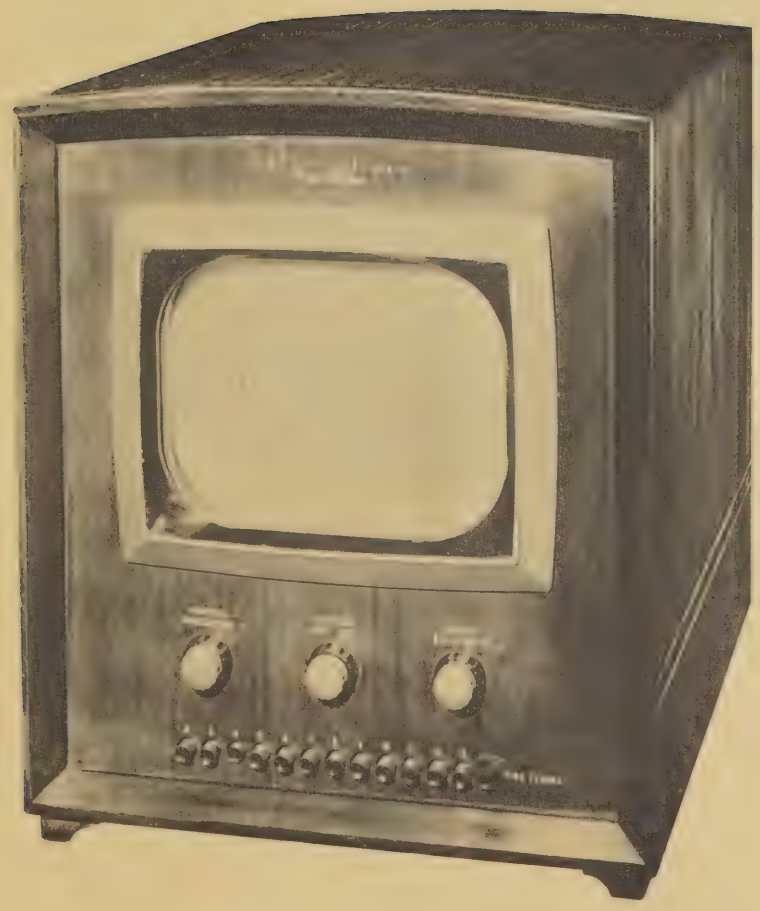
It is not absolutely necessary to perform this check but if signal generator capable of 20MC sweep at 98MC is available it is advisable to check the response of the input system. In order to see the pattern desired the vertical amplifier of the oscilloscope must be set for maximum gain.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	BAND SWITCH POS.	CONNECT SCOPE	ADJUST	REMARKS
Two 39Ω carbon res.	Insert a 39Ω res. in each lead of signal generator and connect across FM antenna terminals.	98MC (20MC Sweep)	92MC 98MC 104MC	FM	Vert. Amp. to pin 4 (Grid) 6SG7 (V1). Low side to chassis.	A16, A17	Adjust A16 and A17 so markers appear as per Fig. 4.

PHOTOFACT* Folder

*TRADE MARK

HALLICRAFTERS
MODELS T-61, T-64, T-67, 509, 510



MODEL T-67

HALLICRAFTERS
MODELS T-61, T-64, T-67, 509, 510

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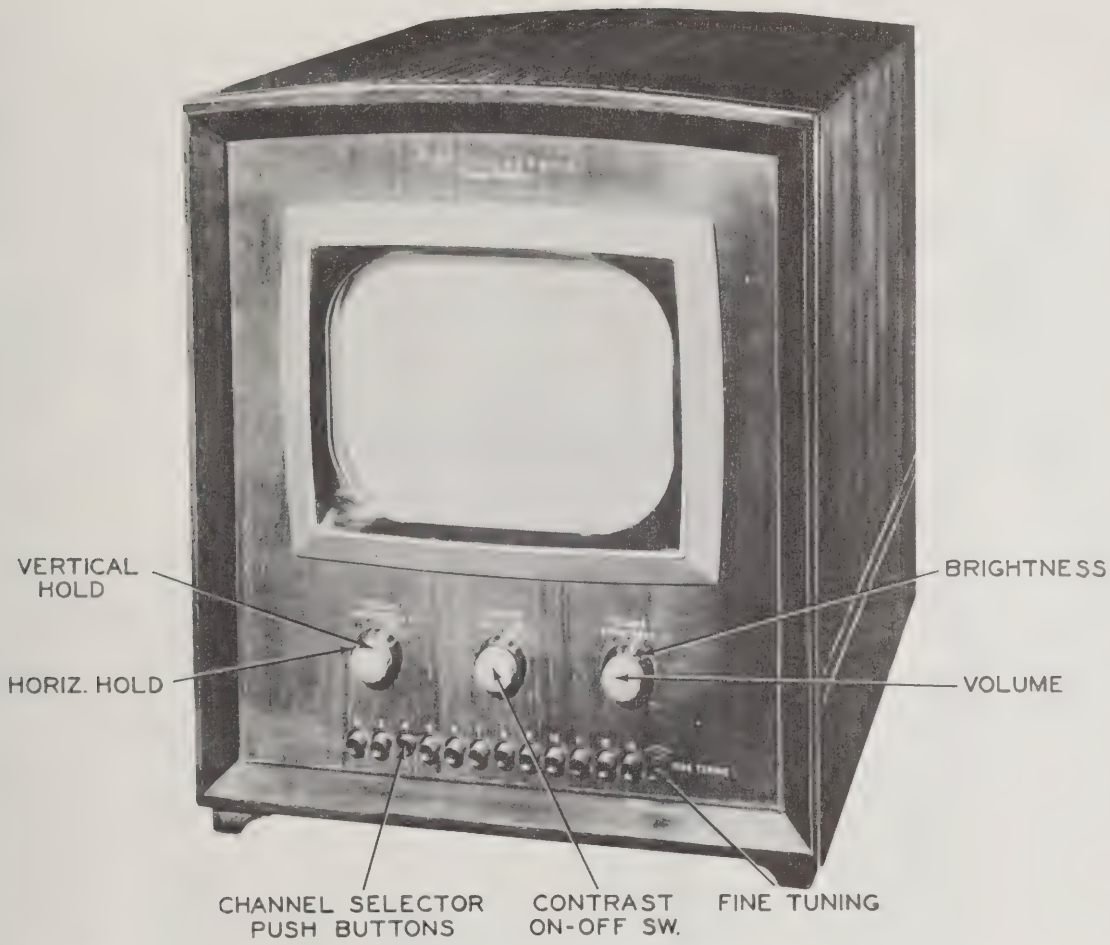
Date 7/49—No. 4913-7 Set No. 65—Folder No. 7



HALLICRAFTERS MODEL T67

TRADE NAME Hallicrafters Models, T61, T64, T67, 509, 510
MANUFACTURER The Hallicrafters Co., 5th & Kostner Ave., Chicago 24, Illinois
TYPE SET Television Receiver
TUBES Twenty-three

POWER SUPPLY 105-125 Volts, 60 Cycles AC RATING: 1.81 Amps. @ 117 Volts
TUNING RANGE—Channels 2 through 13

INDEX

	Page		Page
Alignment Instructions	6,7	Photographs (continued)	
Block Diagram	13	RF Alignment Points	10
Disassembly Instructions	7	Resistor Identification	12,17
Parts List and Description	14,15,16	Trans., Inductor and Alignment Identification	4,9
Photographs		Schematic	2
Cabinet-Rear View	16	Sweep Circuit Adjustments	7
Capacitor Identification	11,18	Tube Placement Chart	5
Chassis-Top View	3,13	Voltage and Resistance Measurements	8
Power Supply Chassis	19		

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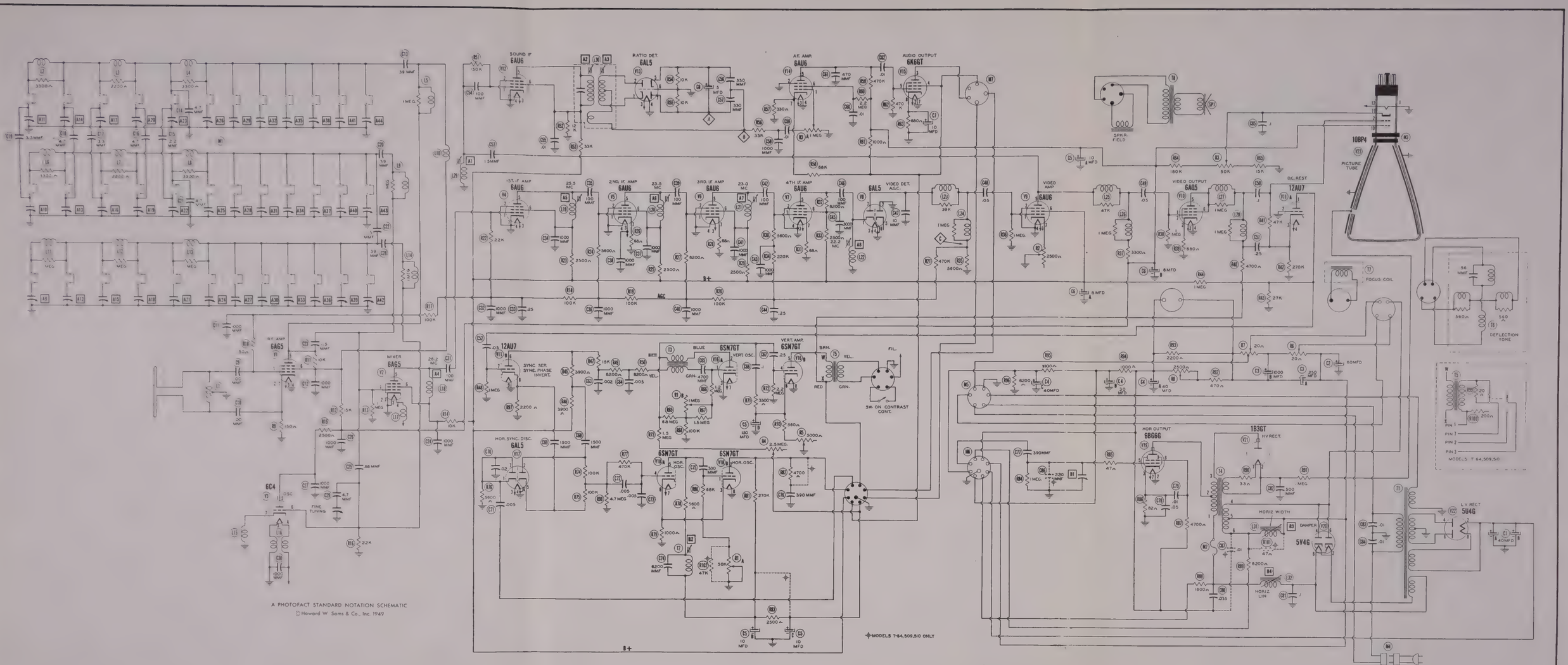
DATE 7/49 4913-7 SET #65 FOLDER #7

HALLICRAFTERS MODELS
T61, T64, T67, 509, 510



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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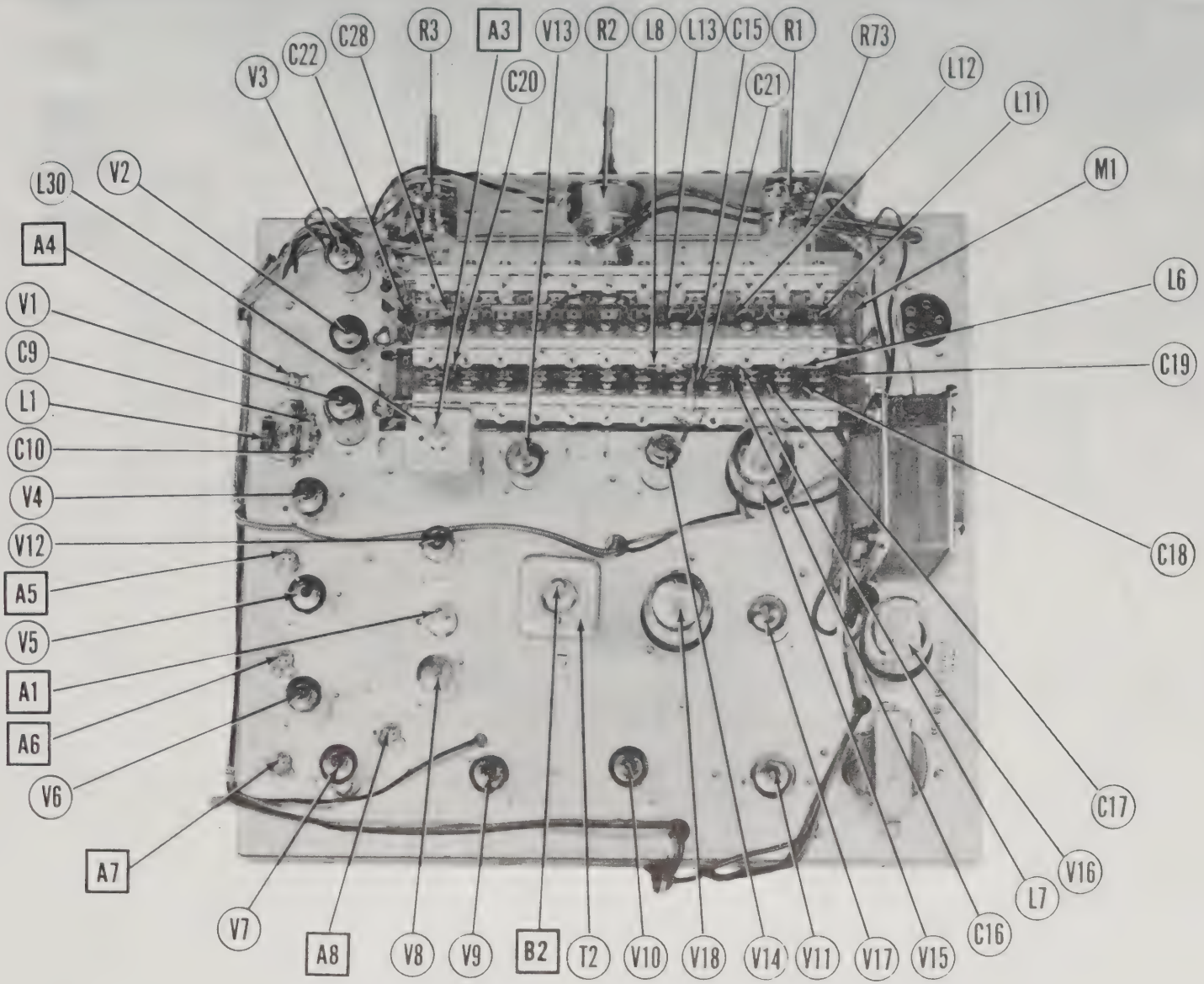
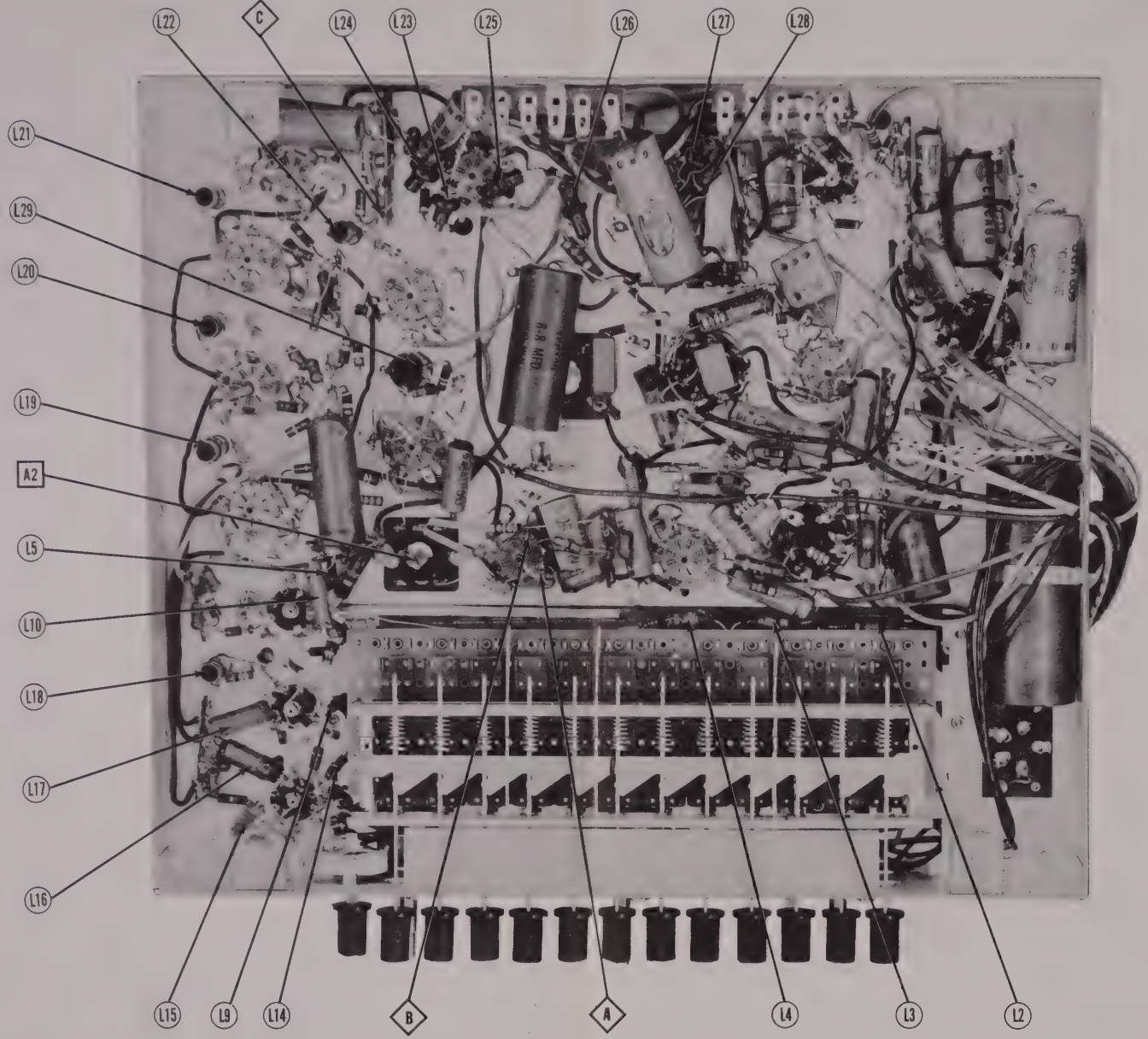
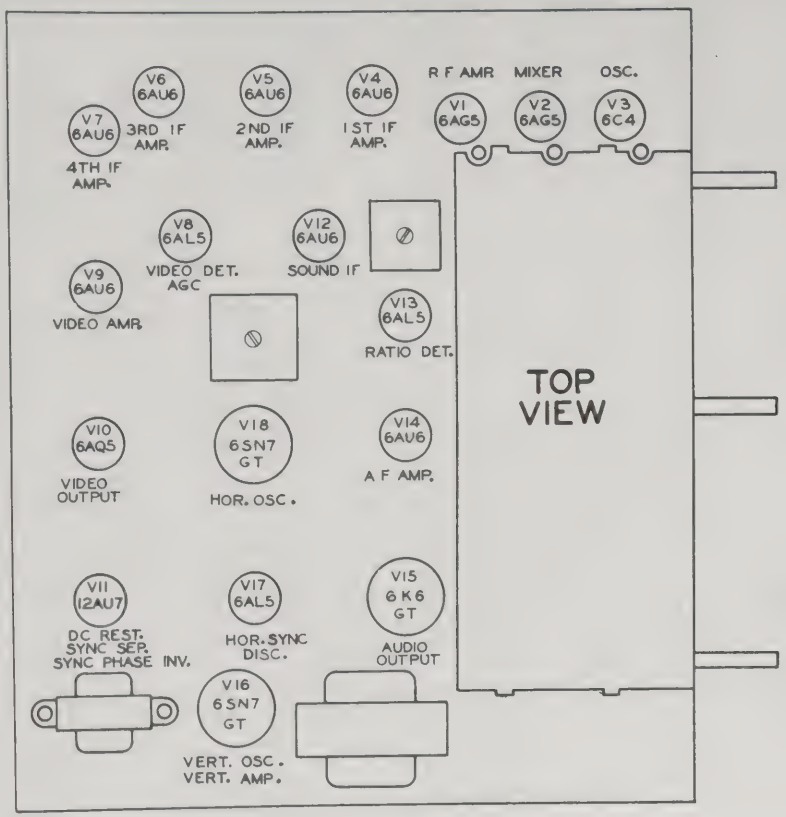
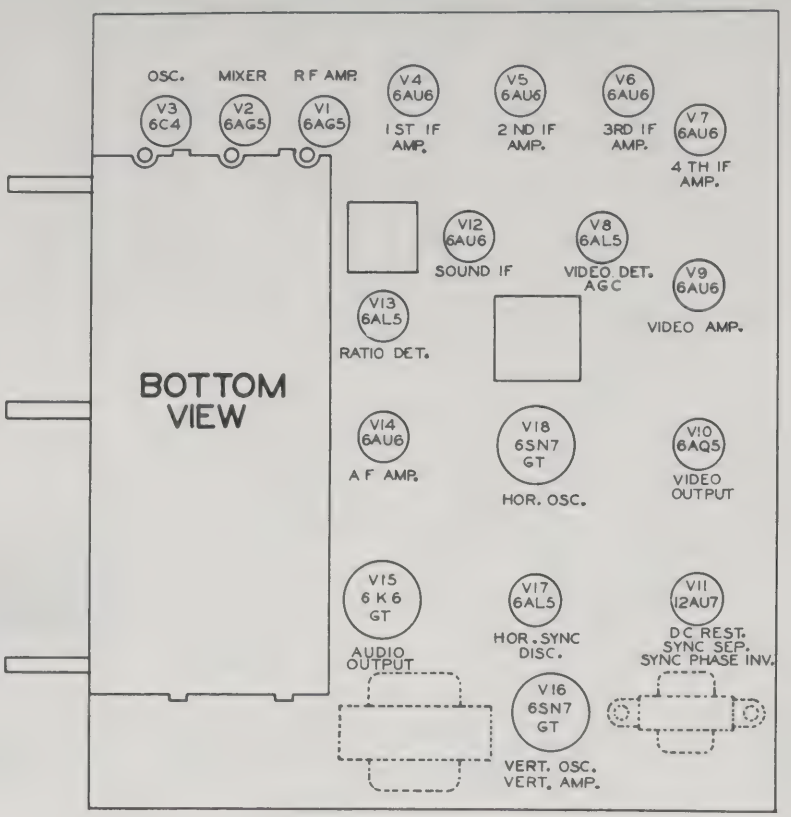


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	5000MMF	High side to pin 1 (Grid) 6AU6 (V9). Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to pin 7 6AL5 (V13) point (A) Common lead to chassis.	A1, A2	Adjust for maximum deflection. Attenuate signal generator to give approximately 1 volt reading on VTVM.
2.	5000MMF	"	"	"	DC Probe to Point (B) Common to chassis.	A3	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

Shift the frequency of the signal generator either side of 4.5MC and slightly readjust A2 for approximately equal peaks. For best results, use only enough signal generator output to give one volt peaks. Retouch A3 for null point.

VIDEO IF ALIGNMENT

Remove oscillator tube V3 (6C4) before aligning the IF coils to prevent any possible spurious beats which might give improper alignment.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
3.	Two 150Ω carbon res.	Insert resistor in each generator lead and connect across antenna terminal.	26.2MC 25.5MC 23.5MC 23.0MC 22.2MC 26.2MC	2 " " " " "	DC Probe to point (C) Common to chassis.	A4 A5 A6 A7 A8 A4	Adjust the five IF coils at their listed frequencies for maximum deflection keeping signal generator level at such a point to maintain approximately a two volt reading on VTVM. Repeak A4 at 26.2MC with a signal generator attenuated to give 1 volt reading on VTVM.

Tune the signal generator from 21MC thru 26.25MC, attenuated to give a 1 1/2 volt reading on VTVM at the peaks. Plot IF Response curve. Check readings at 21.75MC, 26.25MC and the dip between peaks. See Figure 1 for correct response curve.

OVERALL IF RESPONSE CHECK

Connect synchronized sweep voltage from signal generator to horizontal amplifier in scope to obtain horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	5000MMF	High side to pin 1 (Grid) 6AK5 (V2). Low side to chassis	24MC (10MC Sweep)	21.75MC 26.25MC	2	Vert. Amp. to Point (C) Low side to chassis.		If necessary, slightly retouch A4, A5, A6, A7 and A8 to obtain pattern similar to Figure 1. Check to see that markers fall at proper points.

RF ALIGNMENT

The local oscillator operates 24.5MC above the center frequency of each TV channel. To set the local oscillator a separate "BFO" generator set at 24.5MC is used to obtain a zero, beat with this difference frequency.

Couple the "BFO" generator to the receiver by connecting the output lead to a coil of hookup wire wrapped around the video detector tube (V8). Set the fine tuning control to the center of its capacity range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	BFO GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	Two 150Ω carbon res.	Across antenna terminals with 150Ω resistor in each generator lead.	57MC	24.5MC	2	DC Probe to point (C) Common to chassis.	A9	Connect .01MFD capacitor between pin 2 (Grid) of the 10BP4 picture tube (V23) and pin 1 (Grid) of 6AU6 audio Amp. (V14). Adjust A9 for rough audio beat in speaker. Disconnect the .01 capacitor.
6.	Two 150Ω carbon res.	"	"	Off	"	"	A10, A11	Adjust for maximum deflection.
7.	Two 150Ω carbon res.	"	63MC	24.5MC	3	"	A12	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
8.	Two 150Ω carbon res.	"	"	Off	"	"	A13, A14	Adjust for maximum deflection.
9.	Two 150Ω carbon res.	"	69MC	24.5MC	4	"	A15	Reconnect .01MFD capacitoras in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
10.	Two 150Ω carbon res.	"	"	Off	"	"	A16, A17	Adjust for maximum deflection.
11.	Two 150Ω carbon res.	"	79MC	24.5MC	5	"	A18	Reconnect .01MFD capacitors as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
12.	Two 150Ω carbon res.	"	"	Off	"	"	A19, A20	Adjust for maximum deflection.
13.	Two 150Ω carbon res.	"	85MC	24.5MC	6	"	A21	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
14.	Two 150Ω carbon res.	"	"	Off	"	"	A22, A23	Adjust for maximum deflection.
15.	Two 150Ω carbon res.	"	177MC	24.5MC	7	"	A24	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
16.	Two 150Ω carbon res.	"	"	Off	"	"	A25, A26	Adjust for maximum deflection.
17.	Two 150Ω carbon res.	"	183MC	24.5MC	8	"	A27	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
18.	Two 150Ω carbon res.	"	"	Off	"	"	A28, A29	Adjust for maximum deflection.

RF ALIGNMENT (CONT.)

19.	Two 150Ω carbon res.	"	189MC	24.5MC	9	"	A30	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
20.	Two 150Ω carbon res.	"	"	Off	"	"	A31, A32	Adjust for maximum deflection.
21.	Two 150Ω carbon res.	"	195MC	24.5MC	10	"	A33	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
22.	Two 150Ω carbon res.	"	"	Off	"	"	A34, A35	Adjust for maximum deflection.
23.	Two 150Ω carbon res.	"	201MC	24.5MC	11	"	A36	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
24.	Two 150Ω carbon res.	"	"	Off	"	"	A37, A38	Adjust for maximum deflection.
25.	Two 150Ω carbon res.	"	207MC	24.5MC	12	"	A39	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
26.	Two 150Ω carbon res.	"	"	Off	"	"	A40, A41	Adjust for maximum deflection.
27.	Two 150Ω carbon res.	"	213MC	24.5MC	13	"	A42	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
28.	Two 150Ω carbon res.	"	"	Off	"	"	A43, A44	Adjust for maximum deflection.

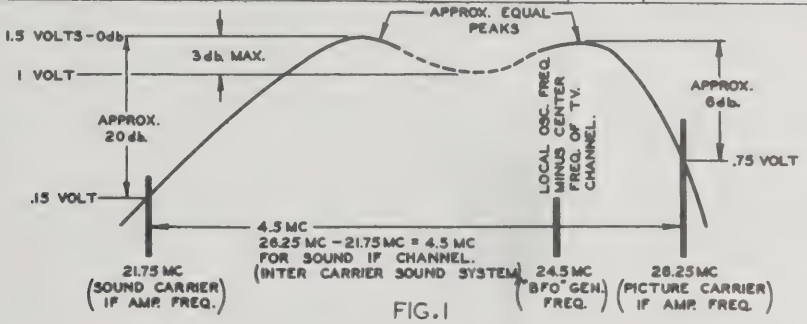


FIG. 1

DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type control knobs.
2. Remove screws holding back cover. Remove back cover.
3. Remove two plugs from power supply chassis and disconnect deflection coil and focus coil plug.
4. Remove four screws holding power supply chassis. Remove power supply.
5. Remove speaker plug from chassis.
6. Remove four 11/32" hex nuts holding speaker. Remove speaker.
7. Remove four screws holding tuner chassis. Remove chassis.

VERTICAL SWEEP CIRCUIT ADJUSTMENT

1. Turn the vertical centering and height controls so test pattern fills mask properly in the vertical plane.
2. Adjust the vertical linearity control for proper vertical symmetry of test pattern. Slight readjustment at vertical centering and height controls may be necessary.

HORIZONTAL SWEEP CIRCUIT ADJUSTMENT

1. Turn the horizontal drive adjustment (B1) clockwise as far as possible without crowding the right hand side of the test pattern. Insufficient horizontal drive will cause the raster to fall short of filling the mask horizontally.
   If it is not possible to "hold" the test pattern horizontally by adjustment of the horizontal hold control, set the horizontal hold control at the midpoint of its rotation and adjust the horizontal oscillator adjustment screw (B2) until picture "sync" horizontally.
2. Adjust the horizontal centering control and the width adjustment (B3) until test pattern fills the mask properly in the horizontal plane.
3. Set the horizontal linearity adjustment (B4) so the test pattern is symmetrical from left to right. Slight readjustment of the horizontal drive trimmer (B1) may be necessary when making this adjustment.

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.3VDC	.7VDC	6.3VAC	0V	120VDC	115VDC	.7VDC		
V 2	6AG5	-.7VDC	0V	0V	6.3VAC	70VDC	70VDC	0V		
V 3	6C4	150VDC	0V	6.3VAC	0V	150VDC	§-1.6VDC	0V		
V 4	6AU6	-.8VDC	0V	6.3VAC	0V	130VDC	130VDC	0V		
V 5	6AU6	-.3VDC	0V	6.3VAC	0V	130VDC	130VDC	.5VDC		
V 6	6AU6	-.3VDC	0V	6.3VAC	0V	130VDC	130VDC	.5VDC		
V 7	6AU6	-.5VDC	0V	6.3VAC	0V	135VDC	130VDC	.5VDC		
V 8	6AL5	0V	0V	6.3VAC	0V	.5VDC	0V	-1.8VDC		
V 9	6AU6	0V	0V	6.3VAC	0V	190VDC	145VDC	4VDC		
V 10	6AQ5	0V	13VDC	6.3VAC	0V	215VDC	215VDC	0V		
V 11	12AU7	3.8VDC	0V	.8VDC	6.3VAC	6.3VAC	125VDC	0V	5.2VDC	0V
V 12	6AU6	-.3VDC	0V	6.3VAC	0V	32VDC	32VDC	0V		
V 13	6AL5	0V	0V	6.3VAC	0V	.1VDC	0V	-.2VDC		
V 14	6AU6	0V	0V	6.3VAC	0V	95VDC	25VDC	.9VDC		
V 15	6K6GT	0V	0V	208VDC	215VDC	0V	0V	6.3VAC	15VDC	
V 16	6SN7GT	.3VDC	2VDC 4.4VDC	0V	0V	320VDC	7VDC 13VDC	6.3VAC	0V	
V 17	6AL5	0V	0V	6.3VAC	0V	.7VDC	0V	-.4VDC		
V 18	6SN7GT	-5.6VDC	125VDC	10VDC	.1VDC	335VDC	10VDC	6.3VAC	0V	
V 19	6BG6G	0V	0V	7VDC	0V	-1.2VDC	0V	6.3VAC	250VDC	TOP CAP †
V 20	5V4G	0V	435VDC	0V	360VDC	0V	360VDC	0V	435VDC	
V 21	1B3GT	† DO NOT MEASURE								
V 22	5U4G	0V	370VDC	0V	350VAC	0V	350VAC	0V	370VDC	
V 23	10BP4	0V	.7VDC	PIN 10 195VDC	PIN 11 50VDC	PIN 12 6.3VAC				

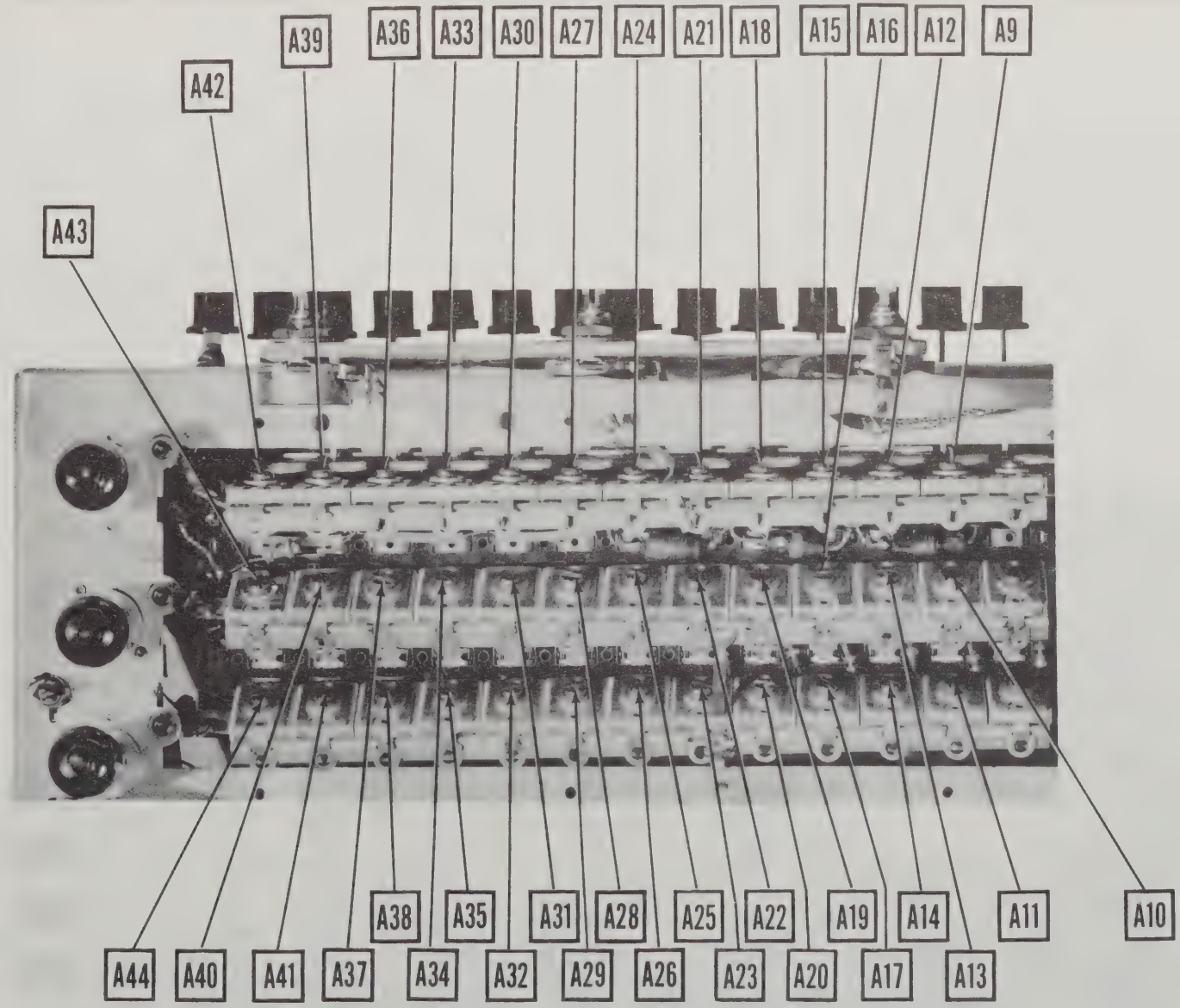
† Do Not Measure
§ Taken with vacuum tube voltmeter.

RESISTANCE READINGS

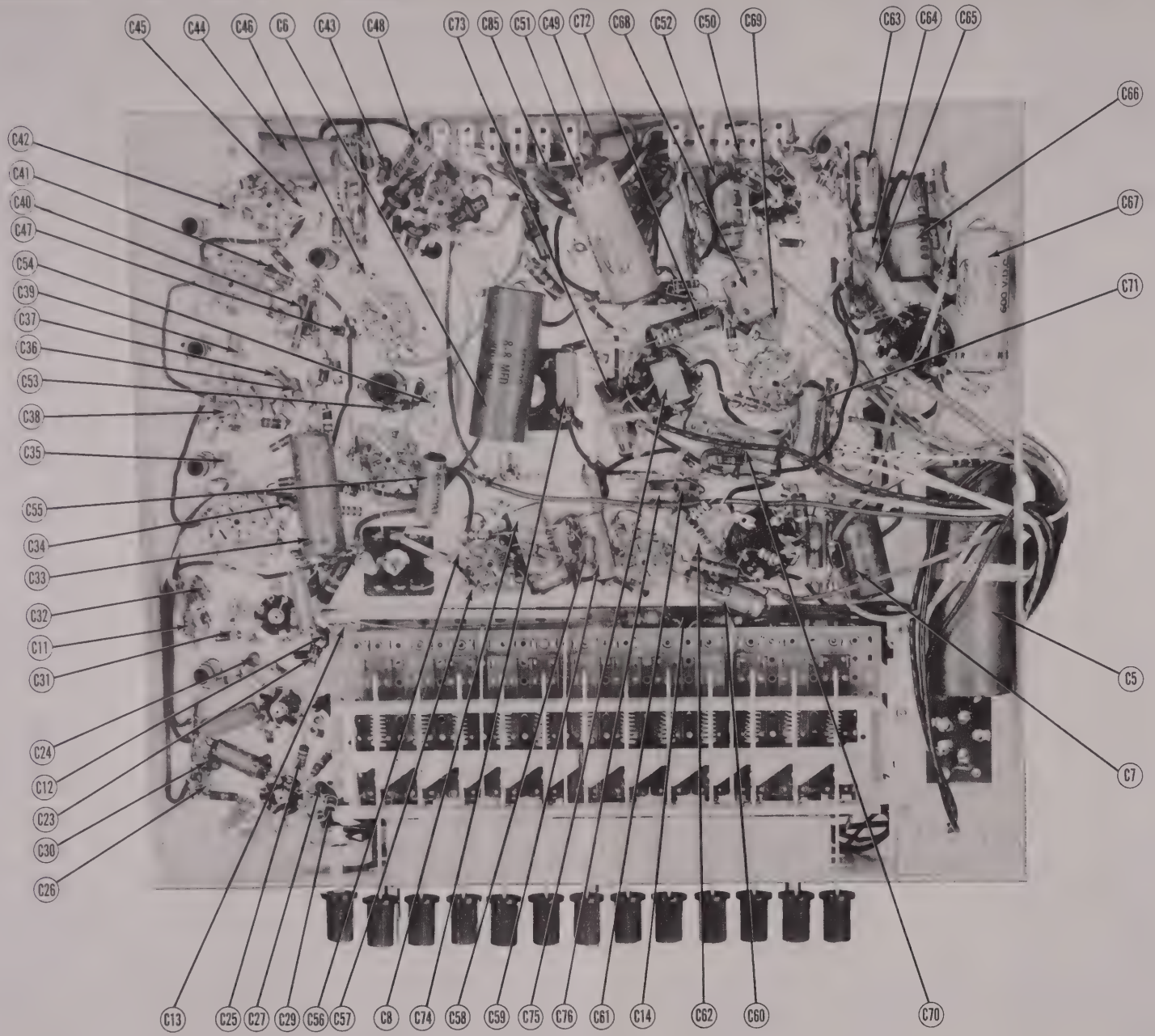
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	850KΩ	150Ω	.2Ω	0Ω	*18KΩ	*18KΩ	150Ω		
V 2	6AG5	1 Meg.	0Ω	0Ω	.2Ω	*12.5KΩ	*12.5KΩ	0Ω		
V 3	6C4	*5KΩ	Inf.	.2Ω	.2Ω	*5KΩ	22KΩ	2Ω		
V 4	6AU6	750KΩ	0Ω	.2Ω	0Ω	*5KΩ	*5KΩ	0Ω		
V 5	6AU6	650KΩ	0Ω	.2Ω	0Ω	*5KΩ	*5KΩ	68Ω		
V 6	6AU6	550KΩ	0Ω	.2Ω	0Ω	*5KΩ	*5KΩ	68Ω		
V 7	6AU6	680KΩ	0Ω	.2Ω	0Ω	*13KΩ	*5KΩ	68Ω		
V 8	6AL5	.2Ω	0Ω	.2Ω	0Ω	Inf.	0Ω	5.6KΩ		
V 9	6AU6	1 Meg.	0Ω	.2Ω	0Ω	*5.8KΩ	*2.2KΩ	2.5KΩ		
V 10	6AQ5	1 Meg.	680Ω	.2Ω	0Ω	*5.5KΩ	*5.5KΩ	1 Meg.		
V 11	12AU7	*35KΩ	0Ω	270KΩ	.2Ω	.2Ω	*10KΩ	1 Meg.	2.2KΩ	0Ω
V 12	6AU6	150KΩ	0Ω	.2Ω	0Ω	*14KΩ	*14KΩ	0Ω		
V 13	6AL5	Inf.	Inf.	.2Ω	0Ω	10KΩ	0Ω	10KΩ		
V 14	6AU6	35Ω	0Ω	.2Ω	0Ω	*470KΩ	*2.2Meg.	330Ω		
V 15	6K6GT	0Ω	0Ω	*1500Ω	*1300Ω	470KΩ	Inf.	.2Ω	680Ω	
V 16	6SN7GT	1.2 Meg.	†2.8Meg. †1.5Meg.	0Ω	2.2 Meg.	*900Ω	5.8KΩ 580Ω	.2Ω	0Ω	
V 17	6AL5	6KΩ	6KΩ	.2Ω	0Ω	4.7Meg.	0Ω	4.7 Meg.		
V 18	6SN7GT	120KΩ	†280KΩ	1000Ω	5 Meg.	†10KΩ	1000Ω	.2Ω	0Ω	
V 19	6BG6G	Inf.	0Ω	82Ω	Inf.	1 Meg.	Inf.	.2Ω	*5KΩ	TOP CAP †230Ω
V 20	5V4G	Inf.	†0Ω	Inf.	65Ω	Inf.	65Ω	Inf.	†0Ω	
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP †380Ω
V 22	5U4G	Inf.	8KΩ	Inf.	28Ω	Inf.	30Ω	Inf.	8KΩ	
V 23	10BP4	0Ω	300KΩ	PIN 10 *2.2KΩ	PIN 11 50KΩ	PIN 12 .2Ω				

* Measured from pin 2 of V22
† Measured from pin 8 of V20

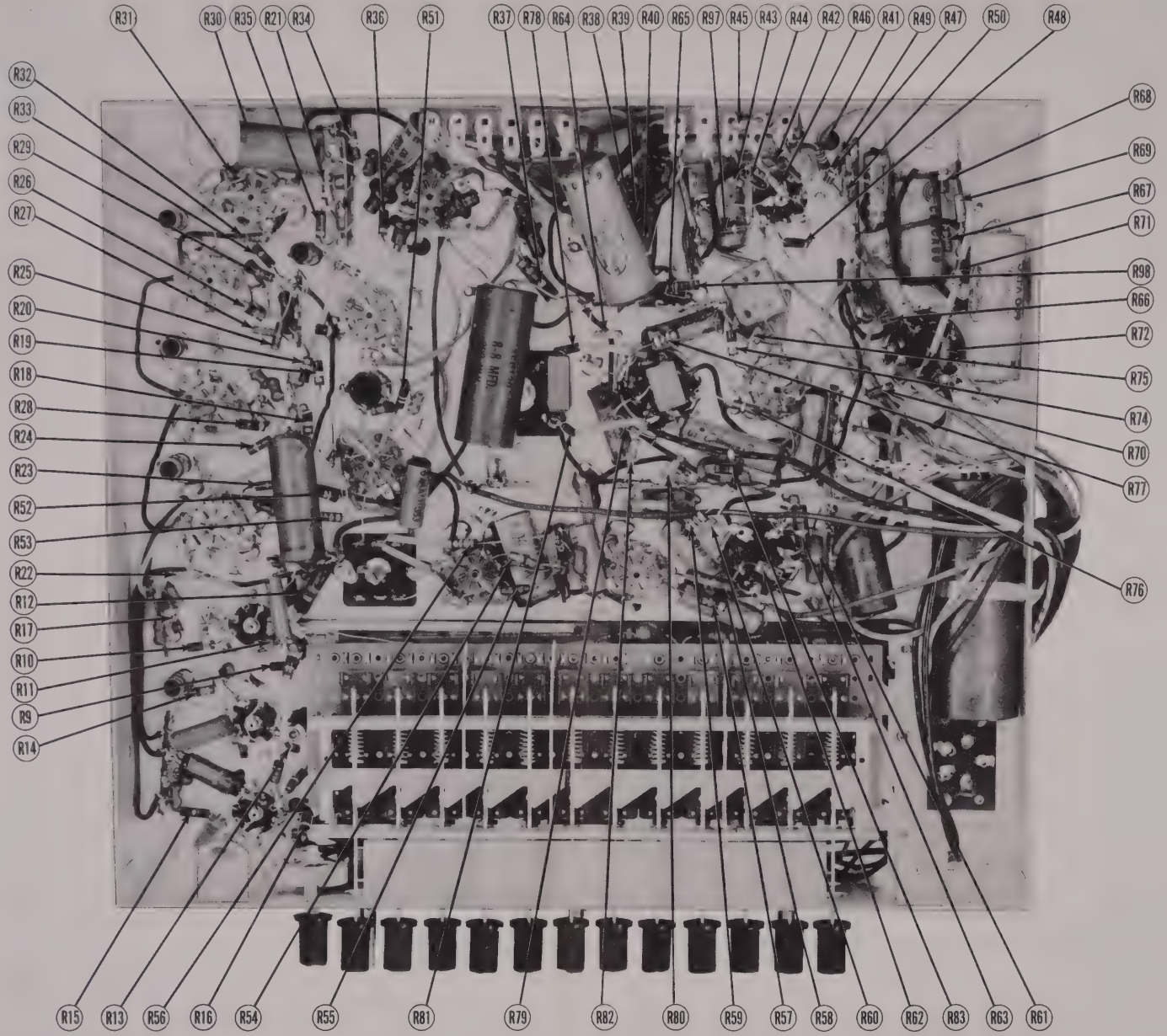
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



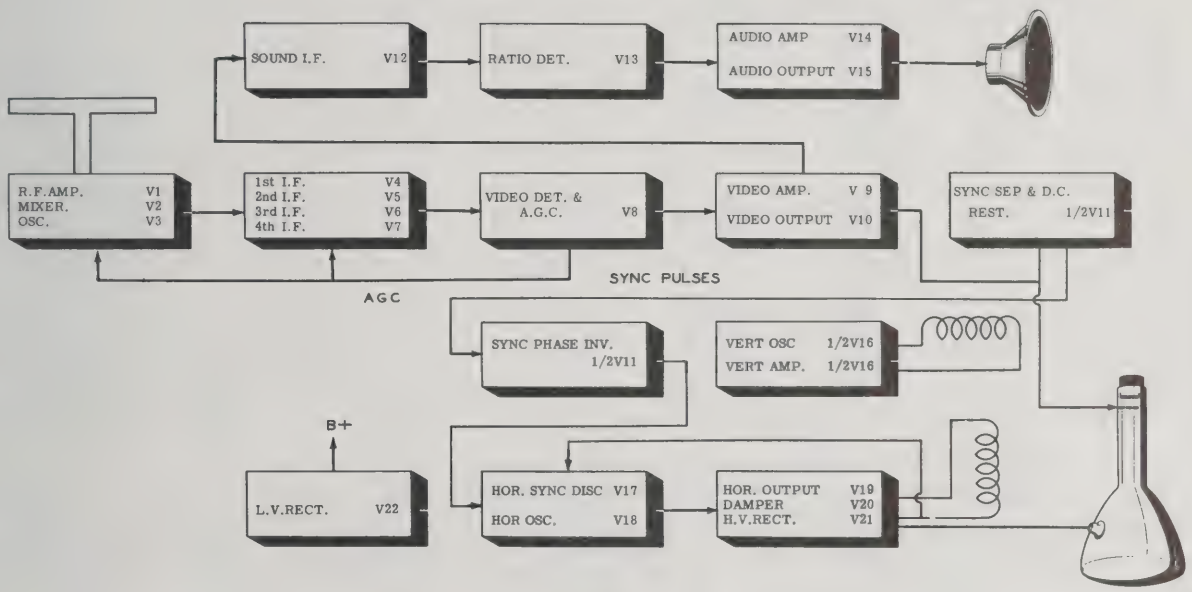
RF ALIGNMENT POINTS



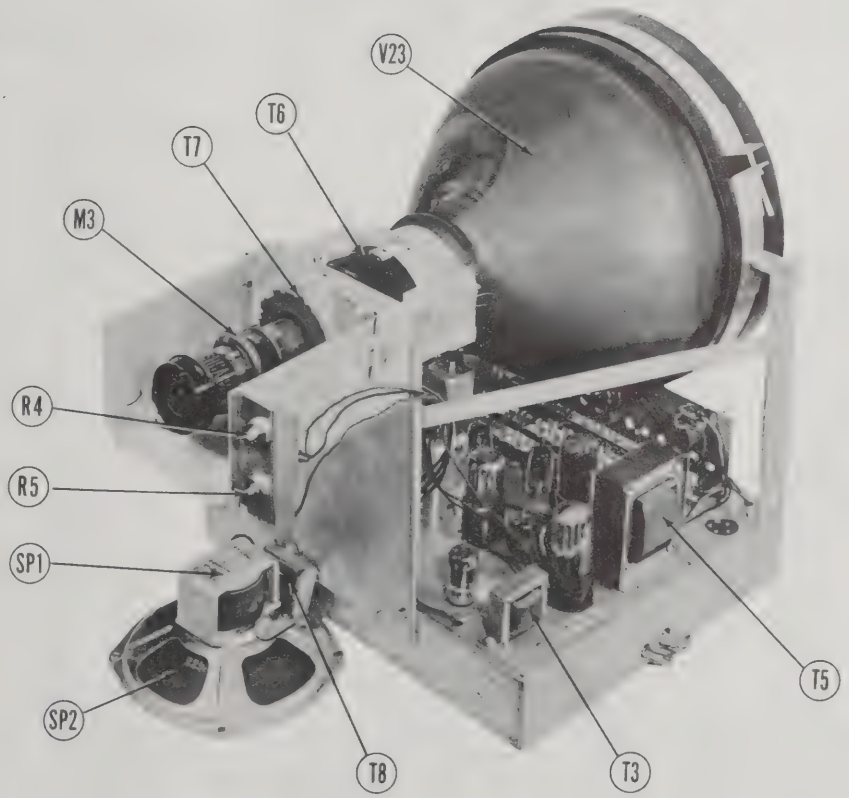
CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



BLOCK DIAGRAM



CHASSIS TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HALLICRAFT. PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AG8	6AG8	TPD	
V2	Mixer	6AG8	6AG8	TPD	
V3	Oscillator	6C4	6C4	6BG	
V4	1st IF Amp.	6AU6	6AU6	THK	
V5	2nd IF Amp.	6AU6	6AU6	THK	
V6	3rd IF Amp.	6AU6	6AU6	THK	
V7	4th IF Amp.	6AU6	6AU6	THK	
V8	Vert. Sep.-AGC	6AL5	6AL5	6BT	
V9	Vert. Amp.	6AC7	6AC7	THK	
V10	Vert. Output	6AG8	6AG8	TPD	
V11	DC Res.-Sync. Sep.-Sync. Clipper	12AV7	12AV7	9A	
V12	Sound IF	6AU6	6AU6	THK	
V13	Ratio Det.	6AL5	6AL5	6BT	
V14	AF Amp.	6AV6	6AV6	6BA	
V15	Audio Output	6K6GT	6K6GT	TS	
V16	Vert. Sep.-Vert. Amp.	6SN7GT	6SN7GT	9BD	
V17	Hor. Sync. Disc.	6AL5	6AL5	6BT	
V18	Hor. Osc.	6SN7GT	6SN7GT	9BD	
V19	Hor. Output	6W6GT	6W6GT	6BT	
V20	Damper	6V4G	6V4G	5L	
V21	Rectifier	1B3GT	1B3GT	5C	
V22	Rectifier	5U4G	5U4G	5T	
V23	Picture Tube	12BP4	12BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HALLICRAFT. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	45B137	AFH58J	EDJ 10118			TVA-64	Filter Red " "
C1B	40	450	45B136	AFH16J	EDJ10074			TVL-9	" "
C2	.05	600	45B134	PRS12/250 PRS6/1000	EZ10095			TVL-66	Hor. Cent. Cont. Byp. Vert. Cent. Cont. Byp.
C3A	40	350	45B138		EZ10106			TVL-54	Filter Red Filter Yellow
C3B	20	450							Filter Blue
C3C	40	450	45B135	AFH30B	EZ10090				Filter Blue
C3D	150	50							Filter Red " "
C4A	40	450	45B139	PRSA450/8-8	BRD114S			TVA-25	Vert. Amp. Cath. Byp. Yel Filter
B	20	300							" "
C5	10	25	45A121	PRS25/16	BR102A			TVA-5	Output Cath. Bypass
C6	.1	600	45A109	PRS150/4	BR550			TVA-13	Stabilizing Cap.
C7	.05	600	[illegible]	[illegible]	[illegible]		SW5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C8	.001	600			47B20101K5	1468-0001	SW5T1	GP1K-100	MO.5-31	1FM-31	" "
C9	.0047	600			47B20A102NJ	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	AGC Filter
C10	.0047	600			[illegible]	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Decoupling
C11	.0047	600			47B20A102NJ	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Decoupling
C12	.0047	600			47B20A102NJ	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Decoupling
C13	39				47B20390K5	1468-00004	SW5Q4		MO.5-44	1FM-44	RF Coupling
C14	4.7		47A160-6				NP0K-5				Fixed Padder
C15	4.2		47A160-4								RF Coupling
C16	4.7		47A160-6				NP0K-5				" "
C17	3.3		47A160-5				NP0K-3				" "
C18	4.7		47A160-6				NP0K-5				" "
C19	3.3		47A160-5				NP0K-3				" "
C20	39				47B20390K5	1468-00004	SW5Q4		MO.5-44	1FM-44	" "
C21	4.7		47A160-6				NP0K-5				Fixed Padder
C22	1.5		47A160-3				NP0K-1.5				Osc. Coupling
C23	1.5		47A160-3				NP0K-1.5				RF Coupling
C24	1000				47B20A102NJ	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Mixer Decoupling
C25	.68		47A160-1								Osc. Coupling
C26	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	RF Bypass
C27	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	Osc. Plate Bypass
C28	39		47B20390K5	1468-00004			SW5Q4		MO.5-44	1FM-44	Osc. Grid Cap.
C29	4.7		47A160-6				NP0K-5				Fixed Padder
C30	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	Osc. Fil. Bypass
C31	200		47B20101K5	1468-0001			SW5T1	GP1K-100	MO.5-31	1FM-31	IF Coupling
C32	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	AGC Filter
C33	.05	200	46AT254J	P488-25			GT2P25		ST-2-25	TC-2	" "
C34	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	1st IF Decoupling
C35	.01		47B20101K5	1468-0001			SW5T1	GP1K-100	MO.5-31	1FM-31	IF Coupling
C36	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	AGC Filter
C37	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	2nd IF Decoupling
C38	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	2nd IF Fil. Bypass *
C39	.01		47B20101K5	1468-0001			SW5T1	GP1K-100	MO.5-31	1FM-31	IF Coupling
C40	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	AGC Filter
C41	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	3rd IF Decoupling
C42	.01		47B20101K5	1468-0001			SW5T1	GP1K-100	MO.5-31	1FM-31	IF Coupling
C43	1000		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	AGC Filter
C44	.05	200	46AT254J	P488-25			GT2P25		ST-2-25	TC-2	" "
C45	5000		47A168		47B20101K5	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	4th IF Decoupling
C46	.01		47B20101K5	1468-0001			SW5T1	GP1K-100	MO.5-31	1FM-31	IF Coupling
C47	.05		47A160-11	1468-00001			SW5Q1	GP1K-10	MO.5-41	YS-41	Diode Filter
C48	.05	200	46AU503J	P288-05			GT2S5		ST-4-05	TM-15	Video Coupling
C49	.05	600	46AY503J	P688-05			GT6S5		ST-6-05	TM-15	" "
C50	.1	600	46AY104J	P688-1			GT6P1		ST-6-1	TM-1	" "
C51	.2	600	46AZ254J	P684-25			GT6P25		ST-6-25	TC-2	" "
C52	.05	600	46AY503J	P688-05			GT6S5		ST-6-05	TM-15	Sync. Coupling
C53	1.5		47A160-3					NP0K-1.5			Sound IF Coupling
C54	100		47B20101K5	1468-0001			SW5T1	GP1K-100	MO.5-31	1FM-31	" " " "
C55	.01	200	46AU103J	P288-01			GP2-335-01	ST-4-01	TM-11		Sound IF Decoupling
C56	330		47B20331K5	1468-0003			SW5T3	GP2K-300	MO.5-33	1FM-335	Diode Load Cap ‡
C57	330		47B20331K5	1468-0003			SW5T3	GP2K-300	MO.5-33	1FM-335	Diode Load Cap ‡
C58	100		47B20A102NJ	1468-001			1W5D1	GP2L-001	MW.5-21	1FM-21	De-emphasis
C59	.01	200	46AU103J	P488-01			GP2-335-01	ST-4-01	TM-11		Audio Coupling
C60	.02	400	46AZ103J	P688-01			GP2-335-01	ST-6-01	TM-11		AF Screen Bypass
C61	470	500	CM50A471M	1468-0005			SW5T6	GP2K-500	MO.5-35	1FM-35	AF Plate Bypass
C62	.01	600	46AZ103J	P688-01			GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C63	.002	600	46AZ202J	P688-002			GT6D2	GP2M-002	ST-6-002	TM-22	Integrator Net. " "
C64	.005	600	46AZ502J	P688-005			GT6D5	GP2M-005	ST-6-005	TM-25	" "
C65	4700	500	CM35A472K	1464-005			1DR5D5				Vert. Osc. Grid Cap.
C66	.1	600	46AY104J	P688-1			GT6P1		ST-6-1	TM-1	Vert. Discharge
C67	.25	600	46AX254J	684-25			GT6P25		ST-6-25	TC-2	Vert. Coupling
C68	1500	500	CM50A152K	1467-0015		1W5D15	GP2L-0015	MW.5-215	1FM-215	Hor. Sync. Coupling
C69	1500	500	CM50A152K	1467-0015		1W5D15	GP2L-0015	MW.5-215	1FM-215	" " "
C70	.02	600	46AY303J	P688-02			GT6S2		ST-6-02	TM-12	Voltage Divider
C71	.005	600	46AZ502J	P688-005			GT6D5	GP2M-005	ST-6-005	TM-25	AFC Feedback
C72	.005	600	46AZ502J	P688-005			GT6D5	GP2M-005	ST-6-005	TM-25	Hor. Sync. Coupling
C73	.005	600	46AZ502J	P688-005			GT6D5	GP2M-005	ST-6-005	TM-25	Voltage Divider
C74	6200	500	CM35A622J								Fixed Trimmer
C75	330	500	CM20A331K	1469-00035		5RST3	GP2K-300		MO5.5-33	TS-33	Hor. Osc. Feedback
C76	390		CM20A391M	1468-0004		5WST4			MO.5-34	1FM-34	Hor. Discharge † †
C77	390	500	47B20391K5	1468-0004		SWST4			MO.5-34	1FM-34	Hor. Sync. Coupling
C78	.05	200	46AU503J	P288-05		GT2S5			ST-4-05	TM-15	Hor. Amp. Cath. Byp. *
C79	.01	600	46AY503J	P688-01		GT6S1	GP2-335-01		ST-6-01	TM-11	Hor. Amp. Screen Byp.
C80	.035	600	46AY353J	P688-033							Damper Filter
C81	.1	600	46AY104J	P688-1		GT6P1			ST-6-1	TM-1	" "
C82	500	10000	47A179								HV Filter
C83	.01	600	46BR103L6	P688-01		GT6S1			ST-6-01	TM-11	Line Filter
C84	.01	600	46BR103L6	P688-01		GT6S1			ST-6-01	TM-11	" "
C85	.1	200	46AU104J	P288-1		GT2P1			ST-2-1	TM-1	Pic. Tube Cath. Dec.
C86	220	500	CM20A221M	1468-00025		5WST25	GP2K-250		MO.5-325	1FM-325	Voltage Divider **
C87	.01	600	46AZ103J	P688-01		GT6S1	GP2-335-01		ST-6-01	TM-11	Fixed Trimmer **

* Not used in all models.
† Some models use .05MFF in this application.
‡ When either item C56 or C57 are replaced, replace both with capacitors of equal value.
† † Models T64, 509, 510 use 220MMF in this application.
* * Models T64. 509, 510 only.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HALLICRAFT. PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	50KΩ	‡	25B788			Horiz. Hold Control } Dual Concentric
B	1 Meg.	‡				Vert. Hold Control. }
R2A	250KΩ	‡	25B789			Contrast Control
B	Shaft		Not Req.			Attach to R2A Per Instructions
C	Switch		Not Req.			" " " "
R3A	1 Meg.	‡	25B787			Volume Control } Dual Concentric
B	50KΩ	‡				Brightness Control }
R4A	2.5Meg.	‡	25B768		AM-83-S	Height Control
B	Shaft		Not Req.		KSS-3	Attach to R4A Per Instructions
R5A	500KΩ	‡	25B769	D11-114	AM-19-S	Vert. Linearity Control
B	Shaft		Not Req.	E	KSS-3	Attach to R5A Per Instructions
R6	20Ω	2	25B707	W-20	58-20	Horiz. Centering Control
R7	20Ω	2	25B706	W20x10		Vert. Centering Control tapped @ 10Ω
R8	2500Ω	4	25B708		58-2500	Focus Control

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HALLICRAFTERS PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ±10% UNLESS OTHERWISE STATED.
R9	150Ω	‡	RC20AE151K		RF Cathode
R10	150Ω	‡	RC20AE151K		RF Grid
R11	10KΩ	‡	RC20AE103K	BTS-10K	RF Plate
R12	15KΩ	1	RC30AE153K	BTA-15K	Voltage Dropping
R13	1 Meg.	‡	RC20AE105M		Mixer Grid
R14	10KΩ	‡	RC20AE103K	BTS-10K	Mixer Decoupling
R15	2500Ω	‡	RC20AE222K	BTS-2200-5%	Osc. Plate 5%
R16	22KΩ	‡	RC20AE223K		Osc. Grid
R17	100KΩ	‡	RC20AE104K	BTS-100K	AGC Network
R18	100KΩ	‡	RC20AE104K	BTS-100K	" "
R19	100KΩ	‡	RC20AE104K	BTS-100K	" "
R20	100KΩ	‡	RC20AE104K	BTS-100K	" "
R21	470KΩ	‡	RC20AE474K	BTS-470K	AGC Filter
R22	22KΩ	‡	RC20AE223K	BTS-22K	1st IF Grid
R23	2500Ω	‡	RC20AE222K	BTS-2200-5%	1st IF Decoupling 5%
R24	560Ω	‡	RC20AE562K		2nd IF Grid
R25	2500Ω	‡	RC20AE222K	BTS-2200	2nd IF Decoupling
R26	68Ω	‡	RC20AE680K		2nd IF Cathode
R27	8200Ω	‡	RC20AE822K	BTS-8200	3rd IF Grid
R28	68Ω	‡	RC20AE680K		3rd IF Cathode
R29	2500Ω	‡	RC20AE222K	BTS-2200	3rd IF Decoupling
R30	5600Ω	‡	RC20AE562K		4th IF Grid
R31	68Ω	‡	RC20AE680K		4th IF Cathode
R32	8200Ω	‡	RC20AE822K	BTS-8200	4th IF Plate
R33	2500Ω	‡	RC20AE222K	BTS-2200-5%	4th IF Decoupling 5%
R34	220KΩ	‡	RC20AE224K	BTS-220K	AGC Network
R35	5600Ω	‡	RC20AE562K	BTS-5600	Video Det. Diode Load
R36	1 Meg.	‡	RC20AE105M	BTS-1 Meg.	Video Amp. Grid
R37	3300Ω	1	RC30AE332K	BTA-3300	Video Amp. Plate
R38	1 Meg.	‡	RC20AE105M	BTS-1 Meg.	Video Output Grid
R39	68KΩ	‡	RC20AE683K	BTS-68K	Video Output Cathode
R40	4700Ω	2	RC40AE272K	BT-2-4700-5%	Video Output Plate 5%
R41	47KΩ	‡	RC20AE473K	BTS-47K	Picture Tube Grid
R42	270KΩ	‡	RC20AE274K	BTS-270K	DC Restorer Cathode
R43	27KΩ	‡	RC20AE273K	BTS-27K	Voltage Divider
R44	1 Meg.	‡	RC20AE105M	BTS-1 Meg.	Sync. Amp. Plate
R45	3900Ω	‡	RC20AE392K	BTS-3900	Sync. Phase Inv. Plate
R46	3900Ω	‡	RC20AE392K	BTS-3900	" " " "
R47	15KΩ	‡	RC20AE153K	BTS-15K	Integrator
R48	1 Meg.	‡	RC20AE105M	BTS-1 Meg.	Sync. Phase Inv. Grid
R49	8200Ω	‡	RC20AE822K	BTS-8200	Integrator
R50	8200Ω	‡	RC20AE822K	BTS-8200	"
R51	150KΩ	‡	RC20AE154K	BTS-150K	Sound IF Grid
R52	12KΩ	‡	RC20AE123K	BTS-12K	Voltage Divider
R53	33KΩ	‡	RC20AE333K	BTS-33K	" "
R54	10KΩ	‡	RC20AE103J	BTS-10K-5%	Ratio Det. Diode Load 5%
R55	10KΩ	‡	RC20AE103J	BTS-10K-5%	" " " " " "
R56	33KΩ	‡	RC20AE333K	BTS-33K	De-emphasis
R57	330Ω	‡	RC20AE331K	BTA-330	AF Cathode
R58	68KΩ	1	RC30AE683K	BTA-68K	Voltage Divider
R59	470KΩ	‡	RC20AE474K	BTS-470K	AF Plate
R60	2.2 Meg.	‡	RC20AE225M	BTS-2.2 Meg.	AF Screen
R61	1000Ω	1	RC30AE102K	BTA-1000	AF Decoupling
R62	470KΩ	‡	RC20AE474K	BTS-470K	Output Grid
R63	680Ω	1	RC30AE681K	BTA-680	Output Cathode
R64	180KΩ	‡	RC20AE184K	BTS-180K	Voltage Divider
R65	15KΩ	‡	RC20AE153K	BTS-15K	Voltage Divider
R66	1.2 Meg.	‡	RC20AE125K	BTS-1.2 Meg.	Vert. Osc. Grid
R67	1.5 Meg.	‡	RC20AE155K	BTS-1.5 Meg.	" " "
R68	100KΩ	‡	RC20AE104K	BTS-100K	Voltage Divider
R69	6.8 Meg.	‡	RC20AE685K	BTS-6.8 Meg.	" " "
R70	560Ω	‡	RC20AE561K	BTS-560	Vert. Amp. Cathode **
R71	3300Ω	‡	RC20AE332K	BTS-3300	Vert. Peaking
R72	2.2 Meg.	‡	RC20AE225M	BTS-2.2 Meg.	Vert. Amp. Grid
R73	1.5 Meg.	‡	RC20AE155K	BTS-1.5 Meg.	Vert. Amp. Plate
R74	100KΩ	‡	RC20AE104K	BTS-100K	Horiz. Sync. Disc. Load
R75	100KΩ	‡	RC20AE104K	BTS-100K	" " "
R76	5600Ω	‡	RC20AE562K	BTS-5600	Feedback Network
R77	470KΩ	‡	RC20AE474K	BTS-470K	AFC Filter
R78	56000Ω	‡	RC20AE562K	BTS-5600	Horiz. Osc. Plate *
R79	10000Ω	‡	RC20AE103K	BTS-1000	Horiz. Osc. Cathode
R80	68KΩ	‡	RC20AE683K	BTS-68K	Horiz. Osc. Grid
R81	270KΩ	‡	RC20AE274K	BTS-270K	Horiz. Osc. Plate
R82	4700Ω	‡	RC20AE472K	BTS-4700	Horiz. Peaking **
R83	25000Ω	‡	RC20AE222K	BTS-2200-5%	Filter ** 5%
R84	1 Meg.	‡	RC20AE105M	BTS-1 Meg.	Horiz. Output Grid †
R85	47Ω	‡	RC20AE470K		Parasitic Suppressor
R86	82Ω	1	RC30AE820K		Horiz. Output Cathode ‡
R87	4700Ω	2	RC40AE472K	BT-2-4700	Horiz. Output Screen † †
R88	1800Ω	2	RC40AE182K	BT-2-1800	Filter ‡ ‡
R89	8200Ω	1	RC20AE822K	BTA-8200	Feedback Network #
R90	3.3Ω	½	RC20AE003M		HV Rectifier Filament
R91	1 Meg.	2	RC40AE105M		HV Filter
R92	470Ω	2	RC40AE471K	BT-2-470	Series Focus Control
R93	2200Ω	1	RC30AE222K	BTA-2200	Focus Coil Shunt
R94	1000Ω	20	24BH102D	DG-1000	Filter
R95	1100Ω	20	24BH112D		"
R96	8200Ω	10	24B822E	AB-8000	Bleeder
R97	2200Ω	½	RC20AE222K	BTS-2200	Sync. Phase Inv. Cathode
R98	4.7 Meg.	½	RC20AE475K	BTS-4.7 Meg.	Hor. Sync. Disc. Load # #
R99	20Ω	1	RC30AE200J		Vert. Deflection Shunt # #
R100	200Ω	2	RC30AE201J		" " " # #
R101	47Ω	1	RC30AE470K		Width Control Shunt # #
R102	47KΩ	½	RC20AE473K	BTS-47K	Hor. Hold Control Shunt # #

** Not used in models T-64, 509, 510
* Models T-64, 509, 510 use 6800Ω in this application
† Models T-64, 509, 510 use 100KΩ in this application
‡ Models T-64, 509, 510 use 56Ω in this application
† † Models T-64, 509, 510 use 2200Ω 2W in this application
‡ ‡ Models T-64, 509, 510 use 220Ω in this application
# Models T-64, 509, 510 use 1000Ω in this application
# # Used in models T64, 509, 510 only.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: HALLICRAFTERS. PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.
T1	117VAC @ 1.81A	680VCT @ .23 ADC SEC. 4 6.3VAC @ 7.5A	5VAC @ 3A	5VAC @ 2A	520170	P-8153† #	TP-410	

† Drill new mounting holes.
# Add series resistor to reduce plate voltage.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: HALLICRAFTERS PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	NOTES
T2	40Ω		50B411				Hor. Osc. Coil
T3	120Ω	1400Ω	55B115	A-8111	T80-1	A-3000	Vert.Block Osc.Trans.
T4	360Ω Tap @ 200Ω	SEC. 1 11.5Ω Tap @ .5Ω SEC. 2 0Ω	55C113	A-8117	TFB-1		Hor.Output Trans.
T5	590Ω	7Ω	55C114	A-8115	TS0-1	A-3035	Vert.Output Trans.
T6A	14Ω		55B140	DY-1			Hor.Deflection Yoke
B	68Ω						Vert. Deflection Yoke
T7	260Ω		51A1065	FC-10			Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: HALLICRAFTERS. PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T8	9KΩ	3.2Ω	280Ω	.42	Part of 85C079	A-8114	R0-16	A-2900	

SPEAKER

ITEM No.	RATING: FIELD RES.	RATING: V. C. IMP.	REPLACEMENT DATA: HALLICRAFTERS PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	65Ω	3.2Ω	85C079			
	CONE DIA.	V. C. DIA.				
SP2	5 7/8"	9/16"				

HALLICRAFTERS MODELS T61, T64, T67, 509, 510

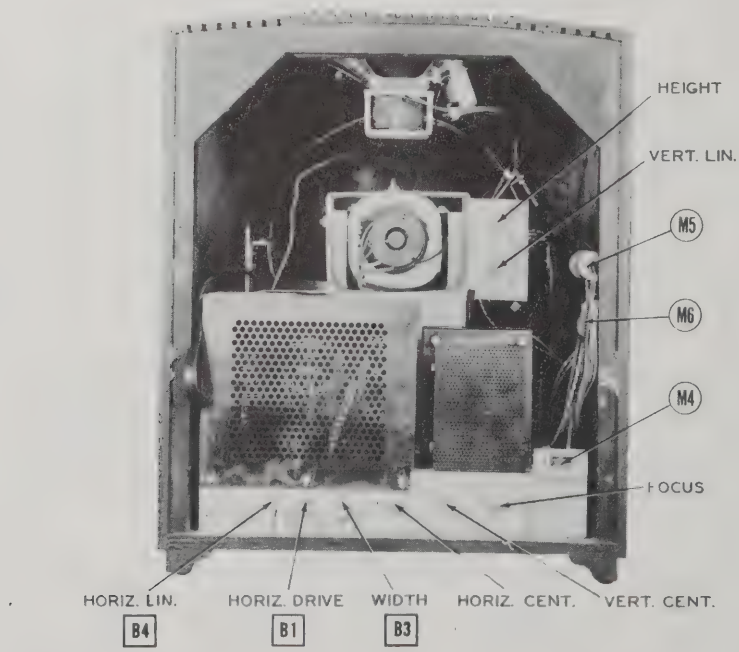
PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

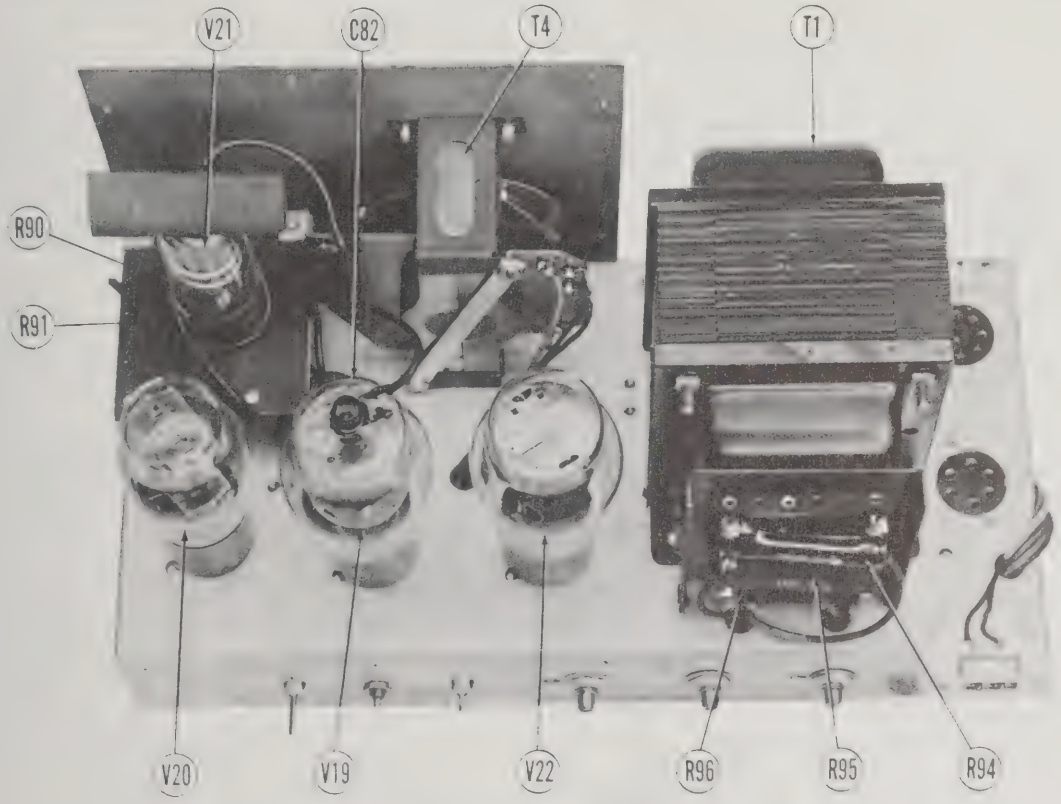
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA HALLICRAFT. PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L1	Ant. Input	0Ω		51A1039		
L2	RF Plate	0Ω		51A1048		Wound on 3.3KΩ, 1 Watt resistor
L3	RF Plate	0Ω		51A1051		Wound on 2.2KΩ, 1 Watt resistor
L4	RF Plate	0Ω		51A1050		Wound on 3.3KΩ, 1 Watt resistor
L5	RF Plate	0Ω		51A1049		Wound on 1 Meg, 1/2 Watt resistor
L6	Mixer Grid	0Ω		51A1048		Wound on 3.3KΩ, 1 Watt resistor
L7	Mixer Grid	0Ω		51A1047		Wound on 2.2KΩ, 1 Watt resistor
L8	Mixer Grid	0Ω		51A1046		Wound on 3.3KΩ, 1 Watt resistor
L9	Mixer Grid	0Ω		51A1041		Wound on 1 Meg, 1/2 Watt resistor
L10	RF Choke	2Ω		53B008		
L11	Osc. Coil	0Ω		51A1044		Wound on 1 Meg, 1 Watt resistor
L12	Osc. Coil	0Ω		51A1043		Wound on 1 Meg, 1 Watt resistor
L13	Osc. Coil	0Ω		51A1042		Wound on 1 Meg, 1 Watt resistor
L14	Osc. Coil	0Ω		51A1041		Wound on 1/Meg, 1/2 Watt resistor
L15	RF Cath.Chk	2Ω		53B008		
L16	Fil.Choke	.5Ω	.5Ω	51A133		
L17	Fil.Choke	.5Ω		53A009		
L18	1st IF	.2Ω		50A372-1		
L19	2nd IF	.2Ω		50A372-1		
L20	3rd IF	.2Ω		50A372-1		
L21	4th IF	.2Ω		50A372-1		
L22	Video Det.	.2Ω		50A372-1		
L23	Peaking	10Ω		51A1079		Wound on 39KΩ resistor
L24	Peaking	11Ω		51A1080		Wound on 1 Meg resistor
L25	Peaking	10Ω		51A1087		Wound on 56KΩ resistor
L26	Peaking	6Ω		51A1082		Wound on 1 Meg resistor
L27	Peaking	8.5Ω		51A1086		Wound on 1 Meg resistor
L28	Peaking	6.5Ω		51A1082		Wound on 1 Meg resistor
L29	Sound Trap	4.8Ω		51A1037		
L30	Ratio Det.	4.8Ω	1Ω	50B406		
L31	Width Control	.5Ω		51B1072		
L32	Horiz. Linearity control	34Ω		51B1071		

MISCELLANEOUS

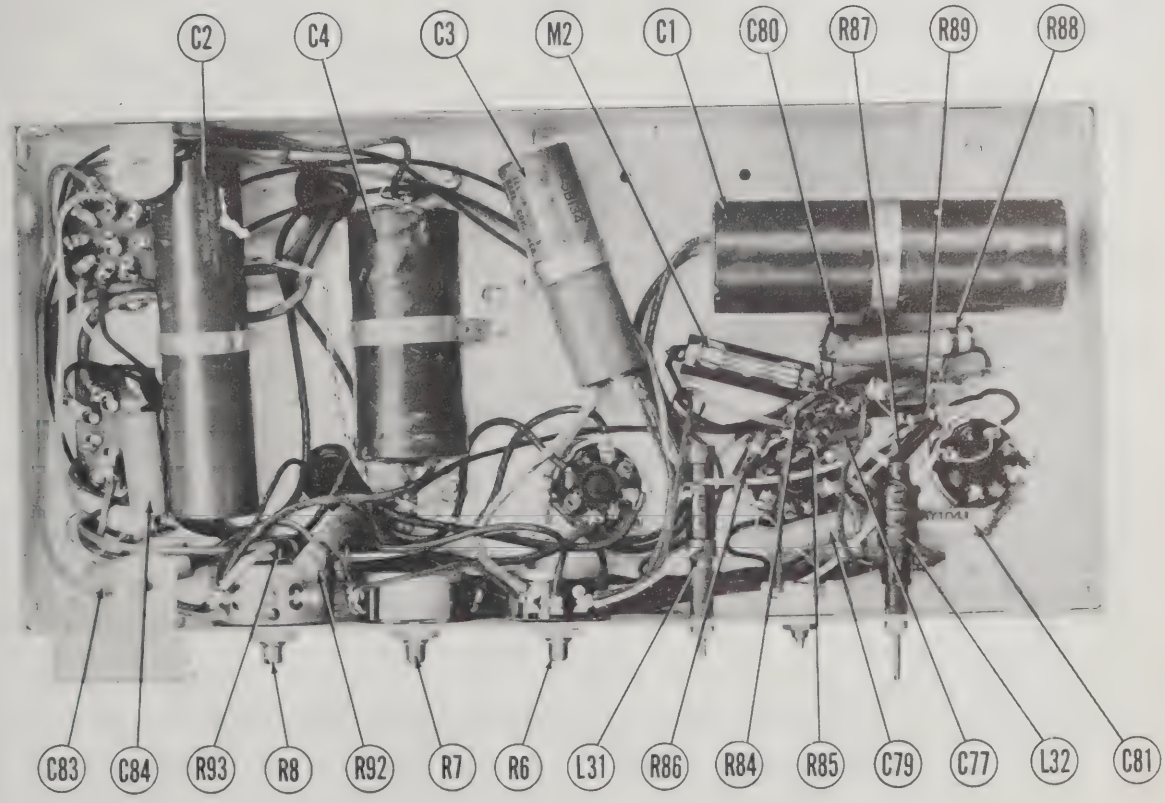
ITEM No.	PART NAME	HALLICRAFTERS. PART No.	NOTES
M1	Channel Selector Assy	41X12104	Includes PB switch, trimmers, coils, etc.
M2	Fuse	39A334	Type 3AG, 1/4 Amp.
M3	Ion Trap	21B083	
M4	Socket	10A286	AC Power
M5A	Socket	6A312	6 Pin (Power)
B	Socket		Octal (Power) T-64, 509, 510 only
M6	Socket	6A313	9 Pin (Power)
M7	Socket	10A303	5 Pin (Speaker)
	Socket	6B309	Picture Tube
	Escutcheon	7E079	Picture Tube
	Safety Glass	22C220	
	Knob	15B147	Vertical and Volume controls (Front Section)
	Knob	15B146	Horiz. and Brightness Controls (Rear Section)
	Knob	15B148	Contrast control
	Knob	17A041-2	Pushbuttons and fine tuning control
	Switch	60A347	Circle- Normal Switch, DPDT.



CABINET-REAR VIEW

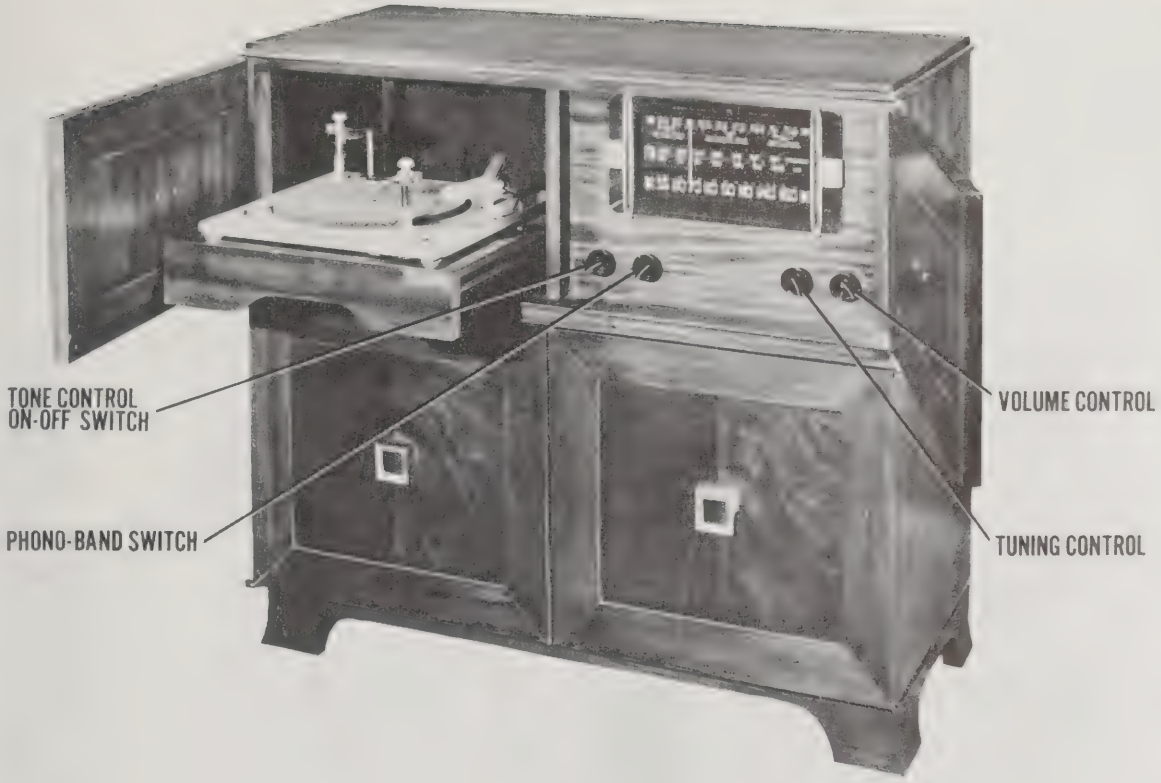


POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW

MAJESTIC MODEL
10FM89 1 (Ch. 10C23E)



MAJESTIC MODEL
10FM89 1 (Ch. 10C23E)

MAJESTIC MODEL 10FM891

TRADE NAME	Majestic, Model 10FM891 (Ch. 10C23E)
MANUFACTURER	Majestic Radio and Television Corp., Elgin, Illinois
TYPE SET	AC Operated Combination Phono-Radio, 2 Band AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(TEN)	Types 6BA6 FM RF Amp., 6SG7 AM RF Amp., 6BE6 FM Converter, 6SA7 AM Converter, 6SG7 1st IF Amp., 6SG7 FM 2nd IF Amp., 6SH7 FM Limiter, 6S8GT DET-AVC-AF, 6V6GT Power Output, 5Y3GT or 5U4G Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .82 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	530-1700KC SHORT WAVE 9.5-15.5MC FREQ. MOD. 87.5-108.5MC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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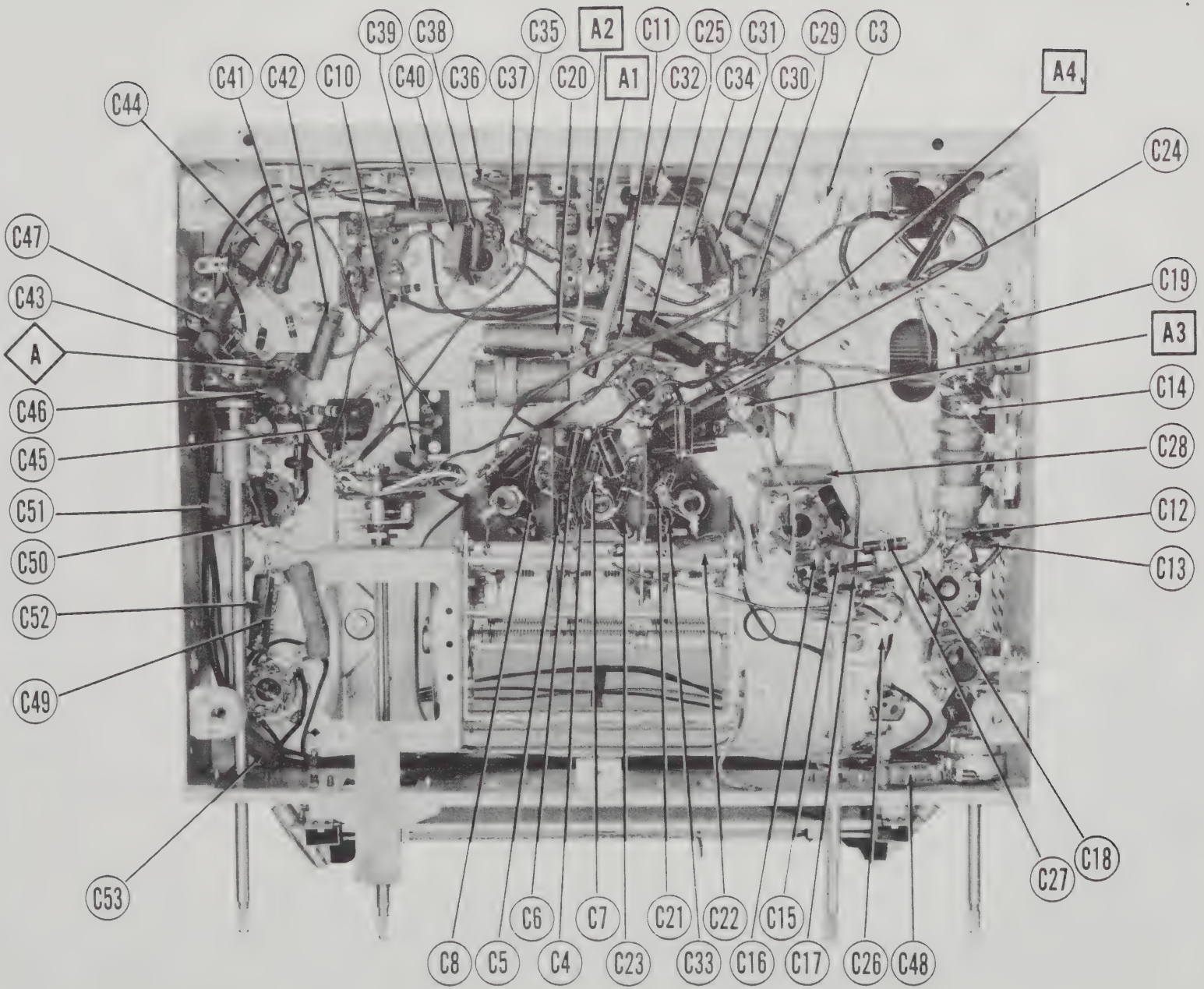
DATE 7/49 4913-8 SET #65 FOLDER 8


C39
C38
C35
A2
C11
C25
C31
C29
C3
C41
C42
C10
C40
C36
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C20
A1
C32
C34
C30
A4
C44
C24
C47
C43
A
C19
A3
C46
C14
C45
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C33
C16
C17
C26
C48

L10
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R17
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R26
R27
R32
R34
R1
R28
R31
L17
M11
R36
R33
R35
L18
L3
M12
R5
R3
R4
L5
R10
R11
L6
R14
R7
M10

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MAJESTIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	FM RF Amp.	6BA6	6BA6	7BK	
V2	AM RF Amp.	6SG7	6SG7	8BK	
V3	FM Converter	6BE6	6BE6	7CH	
V4	AM Converter	6SA7	6SA7	8R	
V5	1st IF Amp.	6SG7	6SG7	8BK	
V6	FM 2nd IF Amp.	6SG7	6SG7	8BK	
V7	FM Limiter	6SH7	6SH7	8BK	
V8	DET-AVC-AF	6S8GT	6S8GT	8CB	
V9	Power Output	6V6GT	6V6GT	7AC	
V10A	Rectifier	5Y3GT	5Y3GT	5T	
B	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MAJESTIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	10	450	19-34	AF22J	UP1145		DY-2x10-450	EL-210	Output Cath. Bypass Filter
B	10	450							
C2	30	450	19-35	AF6J	UP3045		DY-30-450	EL-3	"
C3	47		6-159	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Ext. Ant. Coupling
C4	1000		6-230	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM RF Cath. Bypass
C5	1000		6-230	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM RF Screen Bypass
C6	1000		6-230	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM RF Plate Decoup.
C7	24		6-143	1468-000025	5W5Q25	GP1K-25	MO.5-425	MS-425	RF Coupling
C8	1000		6-230	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM RF Fil. Bypass
C9	47		6-159	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Ext. Ant. Coupling
C10	234		6-208						Fixed Padder
C11	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	AM RF Screen Bypass
C12	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	AM RF Plate Decoup.
C13	100	500	Note 1	1469-0001	5R5T1	GP1K-100	MOS.5-31	MS-31	Fixed Trimmer
C14	5		Note 1	1468-000005	5W5V5	NP0K-5	MO.5-55	MS-55	RF Coupling
C15	234		6-208	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	" " Note 2
C16	234		6-208	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	" " " "
C17	234		6-208						Fixed Padder
C18	.01	400	017-5	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Isolation
C19	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	"
C20	.05	600	016-8	P688-05	GT6S5		ST-6-05	TM-15	AVC Filter
C21	15		6-199	1468-000025	5W5Q2	GP1K-15	MOS.5-42	MS-415	FM Osc. Grid Cap.
C22	1000	500	021-15	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Fixed Padder
C23	1000		6-230	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Bypass
C24	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	FM Conv. Plate Decoup.
C25	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	AM Conv. Plate Decoup.
C26	220		6-207						Fixed Padder
C27	47		6-159	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap.
C28	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	RF Bypass
C29	.05	600	016-8	P688-05	GT6S5		ST-6-05	TM-15	AVC Filter
C30	.02	400	016-6	P488-02	GT4S2		ST-4-02	TM-12	" "
C31	2000		6-231	1467-002	1W5D2	GP2M-002	MW.5-22	1FM-22	1st IF Screen Bypass
C32	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	1st IF Plate Decoup.
C33	1000		6-230	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM Conv. Fil. Bypass
C34	10000	500	021-74	1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	1st IF Fil. Bypass
C35	234		020-53	1468-0002	5W5T2	GP2K-250	MO.5-32	1FM-32	Diode Filter
C36	220	500	020-53	1468-0002	5W5T2	GP2K-250	MO.5-32	1FM-32	" "
C37	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	2nd IF Cath. Bypass
C38	2000		6-231	1467-002	1W5D2	GP2M-002	MW.5-22	1FM-22	2nd IF Screen Bypass
C39	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	2nd IF Plate Decoup.
C40	10000	500	021-74	1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	2nd IF Fil. Bypass
C41	2000		6-231	1467-002	1W5D2	GP2M-002	MW.5-22	1FM-22	3rd IF Screen Bypass
C42	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Decoupling
C43	.01	600	017-5	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	3rd IF Plate Decoup.
C44	10000	500	021-74	1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	3rd IF Fil. Bypass
C45	1200	500	021-20	1467-0015	1D5D15	GP2L-0015	MW.5-215	1FM-215	De-emphasis
C46	100	500	020-39	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Bypass
C47	.02	400	016-6	P488-02	GT4S2		ST-4-02	TM-12	Audio Coupling
C48	.01	400	017-5	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tone Compensation
C49	.006	600	5-69	P688-006	GT6D6		ST-6-006	TM-26	" "
C50	234		020-53	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AF Plate Bypass

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MAJESTIC PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T2	6400Ω	3.7Ω	600Ω	.8Ω		A-3849†	RO-303	A-2902	† Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: MAJESTIC PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-744		
SP1	720Ω	3.7Ω	22-58	MOD.F12-S	12E60	
	CONE DIA.	V. C. DIA.				
SP2	11 3/4"	1"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: MAJESTIC PART No.	MEISSNER PART No.	
L1	SW Ant.	0Ω				
L2	FM Dipole Ant.	0Ω		S-1610		
L3	FM Ant.	0Ω	0Ω	3-183		
L4	RF Plate Chk.	1.5Ω		3-187		
L5	FM RF Coil	0Ω		3-184		
L6	FM Osc.	0Ω	0Ω	3-189		
L7	AM Loop Ant.	.5Ω		20-27		Includes item L8
L8	AM Loop Loading	1.5Ω				Part of Loop Ant. Assy. 20-27 Includes A12
L9	SW Ant.	.8Ω	.2Ω	3-185		
L10	Wave Trap	19Ω		S-1468		
L11A	SW RF	.6Ω	0Ω	3-186		Includes C13, 14, A7 and A11
B	AM RF	49Ω	3Ω			
L12A	SW Osc.	0Ω		3-171		Includes A6 and A10
B	AM Osc.	4Ω				
L13A	FM 1st IF	.2Ω		3-173		
B	AM 1st IF	13Ω	‡5.5Ω			‡ Includes FM Sec. Winding
L14A	FM 2nd IF		.2Ω	3-174		
B	AM 2nd IF	#6Ω	12Ω	3-174		# Includes FM Pr. Winding
L15	FM 3rd IF	.2Ω	.2Ω	3-175		
L16	FM Disc. Transformer	.2Ω	.2Ω	3-176		
L17	RF Choke	3Ω		3-104		
L18	Fil. Choke	.2Ω		3-188		
L19	Fil. Choke	.2Ω		3-188		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: MAJESTIC PART No.		NOTES
M1 to M8	Bayonet	6-8V	0.25A	Blue			Type #44

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: MAJESTIC PART No.	ASTATIC PART No.	REMARKS
M9		L-71	

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA MAJESTIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C51	10000	500	021-74	1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	Det. & AF Fil. Bypass
C52	.01	600	017-5	P603-01	GT0S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C53	.005	600	017-4	P603-005	GT0D5		ST-6-005	TM-25	Output Plate Bypass

Note 1. Items C13, C14, A7, A11, L11A and L11B are combined into one unit obtainable under MFGRS Part No.3-186.

Note 2. Some models use 470MMF to replace items C15 and C16.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MAJESTIC PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	2 Meg.	½	13-25	D18-139X	T-116	Volume control tapped @ 700KΩ
B	Shaft		Not Req.	A	Not Req.	Attach to R1A Per Instructions
R2A	2 Meg.	½	14-7		AM-83-S	Tone control
B	Shaft		Not Req.		KSS-3	Attach to R2A Per Instructions
C	Switch		Not Req.		SW-A	" " " " "

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MAJESTIC PART No.	IRC PART No.	IDENTIFICATION CODES
R3	68Ω	½	02-37		FM RF Cathode
R4	47KΩ	1	03-157	BTA-47K	FM RF Screen
R5	5600Ω	1	03-118	BTA-5600	FM RF Plate Decoupling
R6	100Ω	½	02-44	BW-½-100	AM RF Cathode
R7	47KΩ	½	02-156	BTS-47K	AM RF Screen
R8	5600Ω	1	03-118	BTA-5600	AM RF Plate Decoupling
R9	470KΩ	½	02-199	BTS-470K	AVC Network
R10	10Ω	½	01-2		Parasitic Suppressor
R11	22KΩ	½	01-143	BTS-22K	FM Osc. Grid
R12	22KΩ	2	04-143	BT-2-22K	FM Osc. Anode
R13	22KΩ	½	02-143	BTS-22K	FM Converter Plate Decoupling
R14	470KΩ	½	02-199	BTS-470K	AM Converter Grid
R15	22KΩ	½	02-143	BTS-22K	AM Converter Plate Decoupling
R16	22KΩ	½	02-143	BTS-22K	AM Osc. Grid
R17	22KΩ	2	04-143	BT-2-22K	AM Osc. Anode
R18	47KΩ	½	02-156	BTS-47K	1st IF Screen
R19	5600Ω	1	03-118	BTA-5600	1st IF Plate Decoupling
R20	470KΩ	½	02-199	BTS-470K	AVC Network
R21	1 Meg.	½	02-213	BTS-1 Meg.	" "
R22	82Ω	½	02-41		2nd FM IF Cathode
R23	47KΩ	½	02-156	BTS-47K	2nd FM IF Screen
R24	5600Ω	1	03-118	BTA-5600	2nd FM IF Plate Decoupling
R25	470KΩ	½	02-199	BTS-470K	Test Jack Isolation
R26	33KΩ	½	02-149	BTS-33K	3rd FM IF Screen Bleeder
R27	100KΩ	½	02-170	BTS-100K	3rd FM IF Screen Dropping
R28	100KΩ	½	02-170	BTS-100K	3rd FM IF Plate Decoupling
R29	56KΩ	½	01-160	BTS-56K	Diode Filter
R30	470KΩ	½	02-199	BTS-470K	Diode Load See Note
R31	47KΩ	½	02-157	BTS-47K	RF Filter
R32	10 Meg.	½	13-25	BTS-10 Meg.	AF Grid
R33	470KΩ	½	02-199	BTS-470K	AF Plate
R34	12KΩ	½	02-132	BTS-12K	Tone Compensation
R35	470KΩ	½	02-199	BTS-470K	Output Grid
R36	250Ω	10	9-290	AB-250	Output Cathode
R37	700Ω	10		AB-700	Filter See Note
R38	2.2 Meg.	½	02-226	BTS-2.2 Meg.	Feedback

Note. Not used in all models.

TRANSFORMER (POWER)

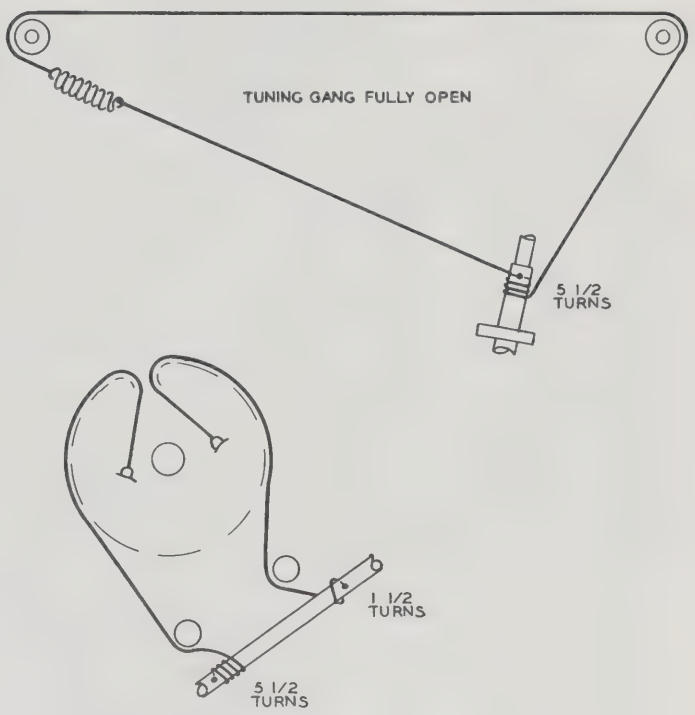
ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA MAJESTIC PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .82A	680VAC CT @ .094A	5VAC @ 2A	6.6VAC @ 3.9A	2-19	P-4080*	PV-100*	P-3153*

* Drill new mounting holes.

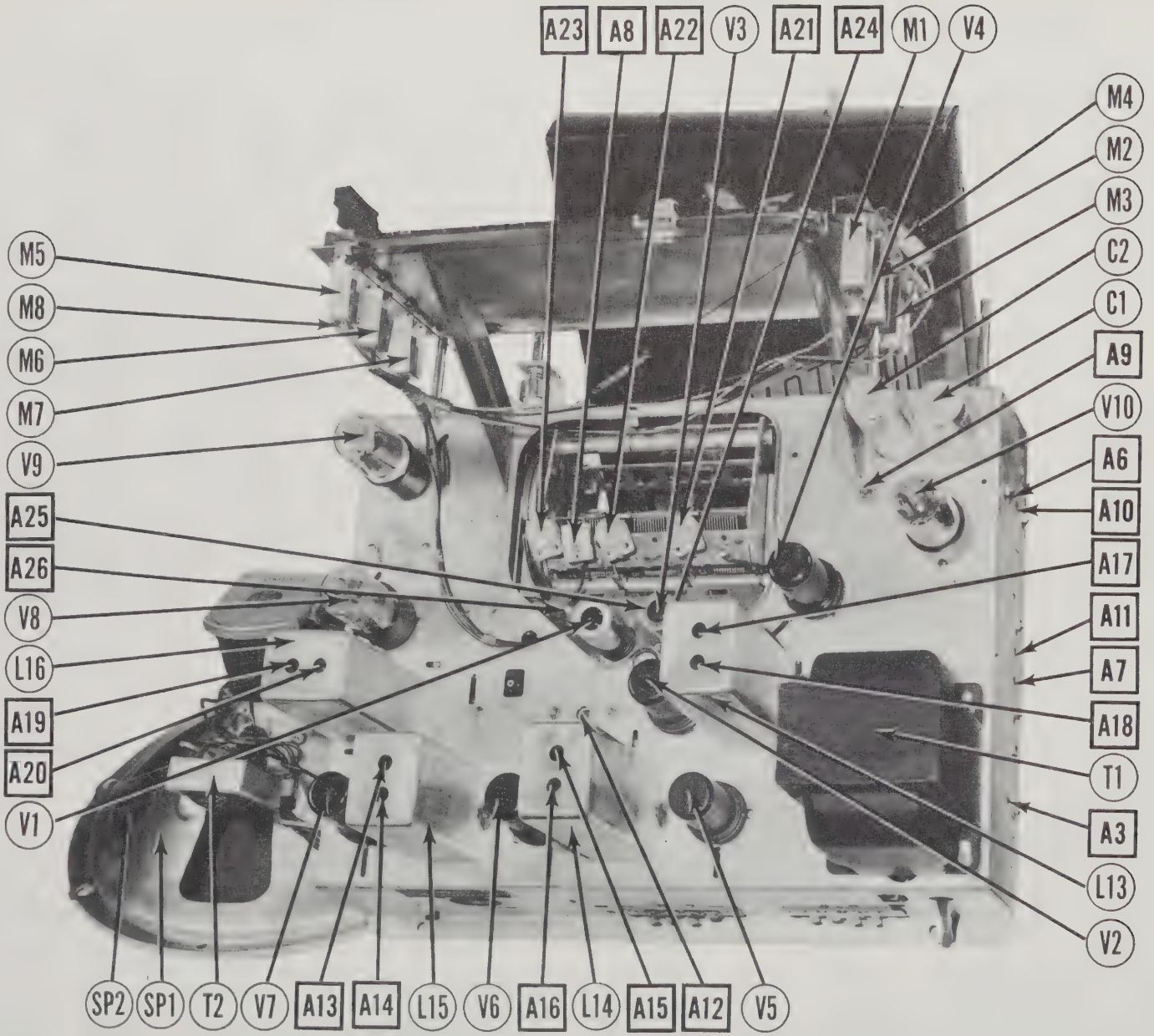
PARTS LIST AND DESCRIPTIONS (Continued)

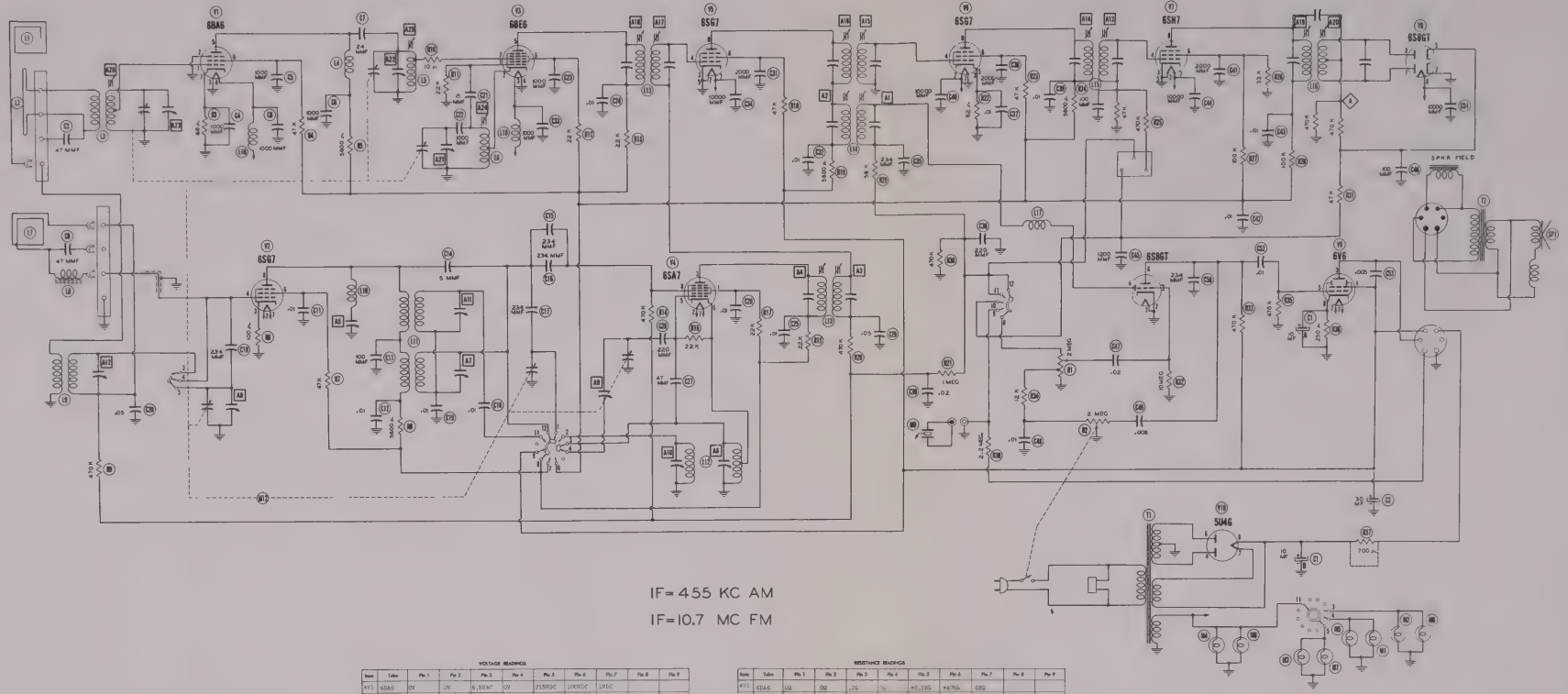
MISCELLANEOUS

ITEM No.	PART NAME	MAJESTIC PART No.	NOTES
M10	Switch	11-58	Band-Phono (RF)
M11	Switch	11-59	Band-Phono (Audio-Pilot Lights)
M12	3 Gang Var. Cap.	7-17	(27-471MMF) Each Section
A5	Trimmer	8-63	Wave Trap Adj.
A8	Trimmer	8-35	BC Ant. Adj.
A9	Padder	8-65	BC Osc. Adj.
A21	Trimmer	8-38	FM Osc. Adj.
A22	Trimmer	8-38	FM RF Adj.
A23	Trimmer	8-38	FM Ant. Adj.
	Dial Pointer	135-35	
	Dial Scale	117-90	BC
	Dial Scale	117-91	SW
	Dial Scale	117-63	FM
	Knob	128-89	Tone, Tuning, Volume
	Knob	128-90	Band Switch
	Cabinet	115-62	Specify Walnut, Mahogany, Blond



DIAL CORD DRIVE


A23
A8
A22
V3
A21
A24
M1
V4
M4
M2
M3
C2
C1
A9
V10
A6
A10
A17
A11
A7
A18
T1
A3
L13
V2
M5
M8
M6
M7
V9
A25
A26
V8
L16
A19
A20
V1
SP2
SP1
T2
V7
A13
A14
L15
V6
A16
L14
A15
A12
V5



IF = 455 KC AM

IF = 10.7 MC FM

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	0V	0V	6.3VAC	0V	215VDC	100VDC	1VDC		
V 2	6BE6	0V	0V	1VDC	-.1VDC	1VDC	125VDC	6.3VAC	240VDC	
V3	6SG7	1-3.4VDC	0V	6.3VAC	0V	195VDC	110VDC	0V		
V 4	6SA7	0V	0V	225VDC	100VDC	125.5VDC	0V	6.3VAC	+.2VDC	
V 5	6SG7	0V	0V	0V	-.4VDC	0V	120VDC	6.3VAC	250VDC	
V6	6SN7	0V	0V	.1VDC	0V	1VDC	100VDC	0.3VAC	+.2VDC	
V7	6SN7	0V	0V	0V	-.8VDC	0V	50VDC	6.3VAC	48VDC	
V8	6S8GT	-.5VDC	0V	-1.4VDC	-.4VDC	-.1VDC	97VDC	0V	6.3VAC	-.1VDC
V9	6S8GT	-.4VDC	0V	-.3VDC	-.4VDC	0V	100VDC	0V	6.3VAC	-.1VDC
V10	5U4GT	0 V	7V	350VDC	330VDC	0V	0V	6.3VAC	13.6VDC	
V11	5U4GT	0V		340VDC	320VAC	0V	320VAC	0V	340VDC	

TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	0Ω	0Ω	.2Ω	0Ω	+6.5KΩ	+475Ω	68Ω		
V 2	6BE6	0Ω	0Ω	1KΩ	3.5 Meg	1KΩ	2000Ω	.2Ω	+0KΩ	
V3	6SG7	0Ω	0Ω	.2Ω	0Ω	+270Ω	+800Ω	30Ω		
V 4	6SA7	0Ω	0Ω	+2.2KΩ	+.22KΩ	.22MΩ	.2Ω	.2Ω	3.5 Meg	
V 5	6SG7	0Ω	0Ω	0Ω	3.5 Meg	0Ω	+475Ω	.2Ω	+0KΩ	
V6	6SN7	0Ω	0Ω	6KΩ	.2Ω	9KΩ	+500Ω	.2Ω	+0KΩ	
V7	6SN7	0Ω	0Ω	0Ω	66KΩ	1MΩ	+100KΩ	.2Ω	+130KΩ	
V 8	6S8GT	450KΩ	0Ω	450KΩ	1MΩ	700KΩ	+500KΩ	0Ω	.2Ω	10 Meg
V9	6S8GT	550KΩ	0Ω	550KΩ	2 Meg	1 Meg	+500KΩ	0Ω	.2Ω	10 Meg
V2	6V6GT	0Ω	0Ω	+1.3MΩ	+700Ω	470KΩ	2 Meg	.2Ω	250Ω	
V10	5U4GT	1MΩ	46KΩ	1MΩ	65Ω	1MΩ	60Ω	1MΩ	65KΩ	

*Measured From Pin 8 Of V10
+Taken in FM Position.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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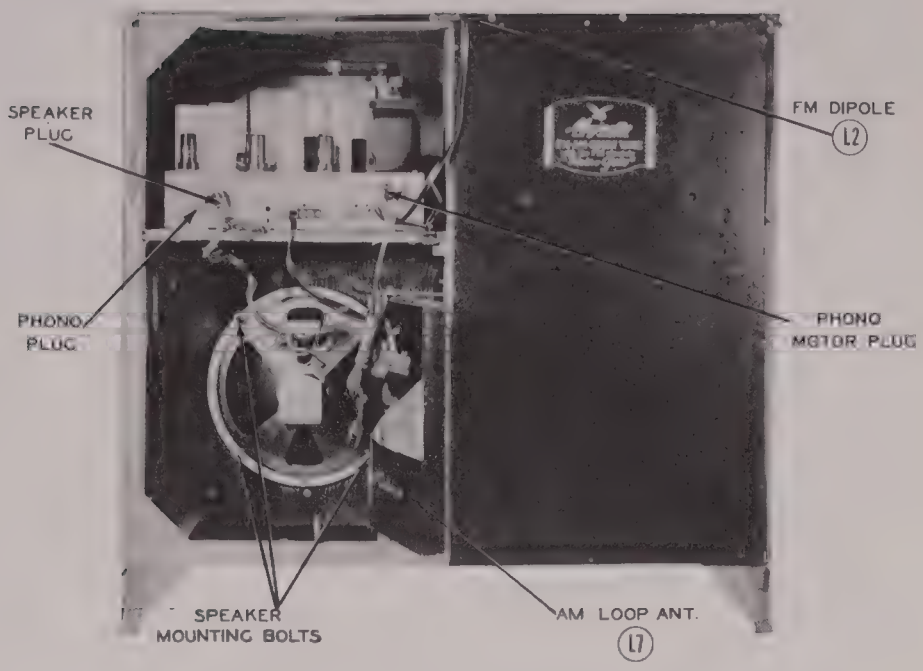


DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove phono motor plug, phono pick-up plug, speaker plug, AM antenna leads, FM antenna leads, SW antenna leads from rear of chassis.
3. Remove four 3/8" hex head machine bolts from underneath chassis.
4. Remove two wood screws at rear of chassis. Remove chassis.
5. Remove four 11/32" hex nuts holding speaker. Remove speaker.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 8 (Grid) 6SA7 (V4). Low side to chassis.	455KC	BC (fully clock-wise)	Tuning cap fully closed	Across voice coil	A1,A2 A3,A4	Adjust for maximum output.
2.		Loop	"	"	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for minimum output.
3.		Loop	1500KC	"	1500KC	"	A6	Adjust for maximum output.
4.		Loop	"	"	"	"	A7,A8, A9	" " " "
5.	400Ω carbon res.	High side to "A1" on Ant. Terminal Strip. Low side to chassis.	15MC	SW (position 3 clock-wise)	15MC	"	A10	" " " "
6.	"	"	15MC	"	15MC	"	A11, A12	" " " "

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	.01MFD	High side to pin 4 (Grid) 6SG7 (V6). Low side to chassis.	10.7MC (Unmod.)	FM (position 2 clock-wise)	Tuning cap fully closed	DC Probe to Pin 3 of test jack. Common to chassis.	A13, A14	Adjust for maximum deflection.
8.	.01MFD	High side to pin 4 (Grid) 6SG7 (V5). Low side to chassis.	"	"	"	"	A15, A16	" " " "
9.	.01MFD	High side to pin 7 (Grid) 6BE6 (V3). Low side to chassis.	"	"	"	"	A17, A18	" " " "
10	.01MFD	"	"	"	"	DC Probe to Point (A) (Unused lug on L16) Common to chassis.	A19	" " " "
11	.01MFD	"	"	"	"	DC Probe to pin 1 of test jack. Common to chassis.	A20	Adjust for zero reading. A positive and negative reading is obtained on either side of correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	BAND SWITCH POS.	CONNECT SCOPE	ADJUST	REMARKS
7.	.01MFD	High side to pin 4 (Grid) 6SG7 (V5). Low side to chassis	10.7MC (450KC Sweep)	10.7MC	FM	Vert. Amp. to pin 3 of test jack. Low side to chassis.	A13, A14, A15, A16	Adjust for maximum amplitude and symmetry as per Fig 1.
8.	.01MFD	High side to pin 7 (Grid) 6BE6 (V3). Low side to chassis	"	"	"	"	A17, A18	"
9.	.01MFD	"	"	"	"	Vert. Amp. to pin 1 of test jack. Low side to chassis.	A19, A20	Adjust A19 for maximum amplitude and symmetry as per Fig 2. Adjust A20 so crossover occurrs at middle of pattern. Continue with step 12.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
12	Direct	Across FM antenna terminals	108MC	FM	108MC	DC Probe to pin 3 of test jack. Common to chassis.	A21	Adjust for maximum deflection.
13	Direct	"	"	"	"	"	A22, A23	" " " "
14	Direct	"	88MC	"	88MC	"	A24	" " " "
15	Direct	"	"	"	"	"	A25, A26	Adjust for maximum deflection. If necessary, repeat steps 12, 13, 14, and 15 until tracking is correct.

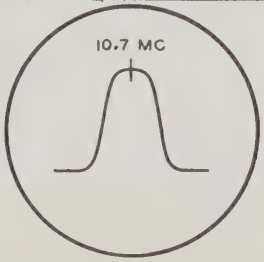


FIG. 1

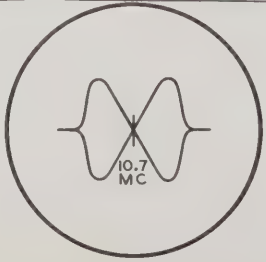
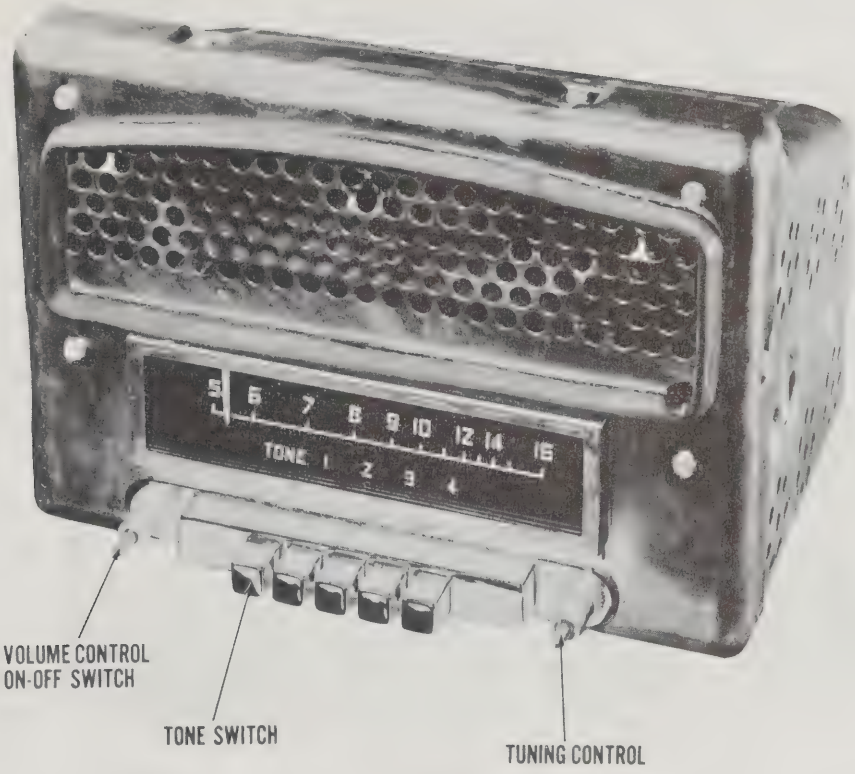


FIG. 2



MOPAR
MODEL 603

MOPAR
MODEL 603

MOPAR MODEL 603

TRADE NAME	Mopar, Model 603
MANUFACTURER	Chrysler Corp., Detroit 31, Michigan.
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne Receiver.
TUBES (SIX)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AT6 DET.-AVC-AF, 6V6GT Power Output, 6X4 Rectifier.
POWER SUPPLY	6 Volt Storage Battery RATING 6.6 Amp. @ 6 Volts DC
TUNING RANGE—BROADCAST	535-1605KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

A special alignment tool is required for the tuner cores - Part No. 66A76278
Remove the dial scale to gain access to the tuner slugs.
The dummy antenna used consists of 40MMF in series with the high side of the signal generator, which is bypassed to ground on the receiver side of the capacitor by another 40MMF capacitor. Pre-set the sensitivity control to give 2 Volts ±1/2 Volt on the RF tubes. (Measure between control and chassis.)

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 7 (Grid) of 6BE6 (V2). Low side to chassis.	455KC	High frequency end.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. Repeat the adjustments to assure accurate alignment.
2.	Dummy Ant. (See above)	High side to antenna receptacle. Low side to chassis.	1605KC	High frequency end. Coil cores should project 1-1/8" from coil cans.	"	A5, A6, A7	Adjust for maximum output in order indicated.
3.	Dummy Ant. (See above)	"	1300KC	Set spacing between treadle bar and tuner frame to 21/32"	"	A8, A9, A10	Adjust for maximum output in order indicated. Replace the dial scale and set the pointer to 1300KC by means of the pointer adjustment screw.
4.	After alignment has been completed, set signal generator to 600KC with 400 microvolt output. Turn the receiver to 600KC and adjust the sensitivity control to give 1 watt output. (One watt is equivalent to 1.79 Volts on output meter)						
5.	Install receiver in car and tune in weak station near 1400 KC. Peak A7 for maximum volume.						

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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DATE 7/49 4913-9 SET #65 FOLDER 9

PARTS LIST AND DESCRIPTIONS

MOPAR MODEL 603

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOPAR-MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	DET.-AVC-AF Amp	6AT6	6AT6	7BT	
V5	Power Output	6V6GT	6V6GT	7AC	
V6	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOPAR-MOTOROLA PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	350	23A473015	AFH6H6G4A	UP6BJ37			EL-323	■Filter
B	30	300			BR202A				▲Filter
C	20	25							Output Cath. Bypass
C2	100	500	21B77562	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Voltage Divider
C3	.006	100	8C4529	P688-006	GT5D6	GP2M-006	ST-6-006	TM-26	Ant. Coupling
C4	.05	100	8K13514	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C5	.05	100	8K13514	P288-05	GT2S5		ST-4-05	TM-15	RF Cath. Bypass
C6	.1	400	8K13166	P488-1	GT4P1		ST-4-1	TM-1	Decoupling
C7	5	500	21K70720	1468-00008	5W5V5	NP0K-5	MO.5-55	MS-55	RF Coupling
C8	50	300	21K74661	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C9	220	500	21K580276						Fixed Trimmer ±5%
C10	50	300	21K74661	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	IF Coupling
C11	.05	100	8K13514	P288-05	GT2S5		ST-4-05	TM-15	Audio Coupling
C12	500		21K481377	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	AF Plate Bypass
C13	.006	400	8K71910	P488-006	GT6D6		ST-6-006	TM-26	Tone Comp.
C14	.03	400	8K71911	P488-03	GT4S3		ST-6-03	TM-13	Audio Coupling
C15	.006	400	8K71910	P488-006	GT6D6		ST-6-006	TM-26	Output Plate Bypass
C16	.006	1600	8K12840	P1688-006	GT16D6		STM-16 -006	MB-26	Buffer
C17	.5	100	8C580845	P288-5	GT2P5		SHH-1	68P20	Hash Filter
C18	.5	100	8C580845	P288-5	GT2P5		SHH-1	68P20	Hash Filter

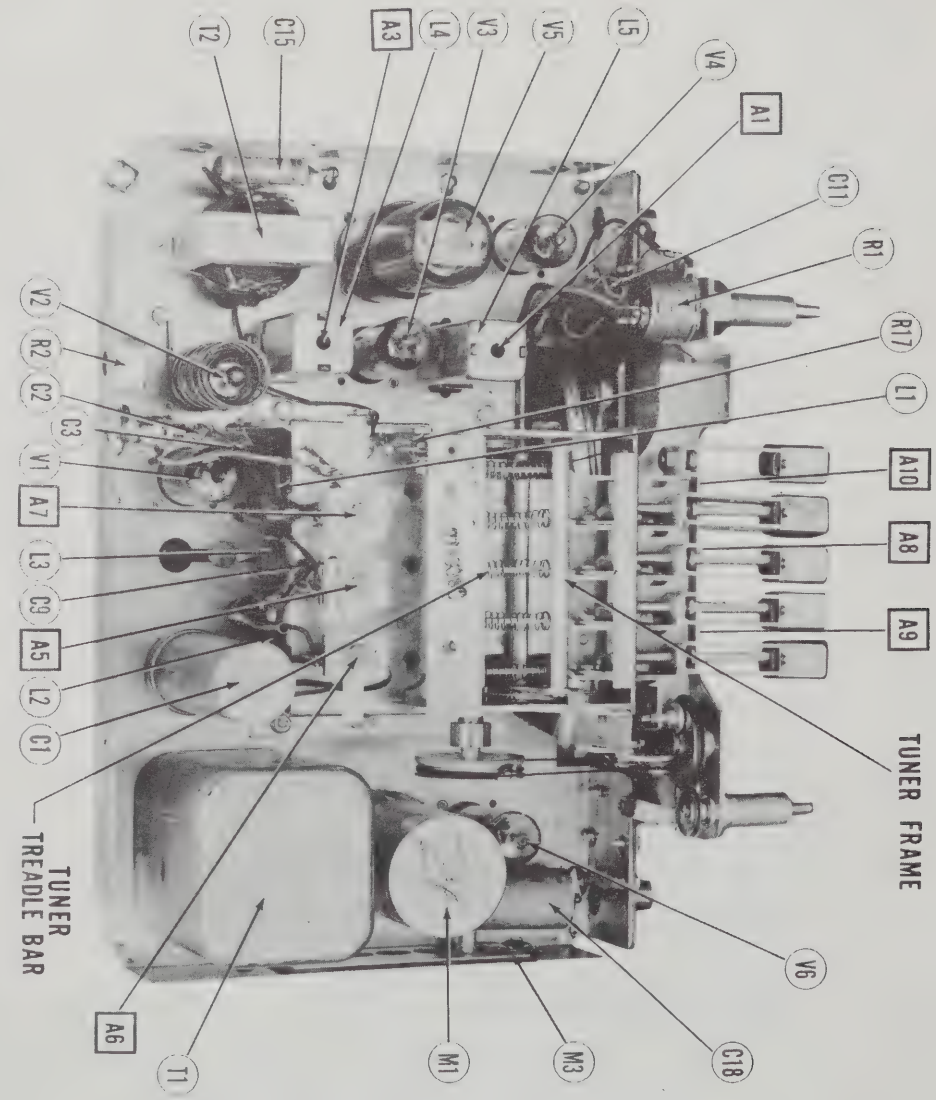
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOPAR-MOTOROLA PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
R1	500KΩ	½	18A485390			Volume control and switch
R2	700Ω	1	18K77552			Sensitivity control

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOPAR-MOTOROLA PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R3	470KΩ	½	6R6032	BTS-470K	RF Grid
R4	100KΩ	½	6R6075	BTS-100K	Converter Grid
R5	33KΩ	½	6R6012	BTS-33K	Osc. Grid
R6	150Ω	½	6R3992	BW-½-150	Conv. Cathode
R7	390Ω	½	6R5554	BTS-390	IF Cathode
R8	6800Ω	2	6R6287	BT-2-6800	Screen Dropping
R9	1 Meg	½	6R6004	BTS-1 Meg	AVC Network
R10	1 Meg	½	6R6004	BTS-1 Meg	Diode Load
R11	47KΩ	½	6R6056	BTS-47K	Diode Filter
R12	6800Ω	½	6R6287	BTS-6800	AF Cathode
R13	3.3 Meg	½	6R2118	BTS-3.3 Meg	AF Grid
R14	470KΩ	½	6R6032	BTS-470K	AF Plate
R15	470KΩ	½	6R6032	BTS-470K	Output Grid
R16	220Ω	1	6R6389	BW-1-220	Output Cathode
R17	27KΩ	½	6R6434	BTS-27K	Tone Compensation
R18	1000Ω	1	6R476004	BTA-1000	Filter
R19	10KΩ	½	6R6054	BTS-10K	Series Buffer
R20	56Ω	½	6R5614	BW-½-56	Hash Suppression
R21	56Ω	½	6R5614	BW-½-56	Hash Suppression

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOPAR-MOTOROLA PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	6VDC @ 3.8A	540VCT @ .059A DC			25K580539	P-4062#	VT-4	P-4071#

#Drill New Mounting Holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOPAR-MOTOROLA PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	6800Ω	3.5Ω	340Ω	.2Ω	25B70171	A-3856	RO-302	A-2931	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOPAR-MOTOROLA PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V.C. IMP.				
SP1A	PM	3.5Ω	50B485788			
B			50B580110			Alternate
C			50B580175			Alternate
D			50B580176			Alternate
	CONE DIA.	V.C. DIA.				
SP2A	4-7/8"x7"	3/4"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MOPAR-MOTOROLA PART No.	MEISSNER PART No.	
L1	Ant. Coil	14Ω		24B580278		
L2	RF Coil	14Ω		24K580557		
L3	Osc. Coil	.8Ω	4.5Ω	24B580279		
L4	Input IF	18Ω	18Ω	24B485553	16-6668	
L5	Output IF	18Ω	18Ω	24K485554	16-6669*	*Add 100MMF from Black Lead to ground.
L6	Hash Choke	.2Ω		24A472535		

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				MOPAR MOTOROLA PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	INT	6.0V	115∿	48B3333	C42M	5342M	

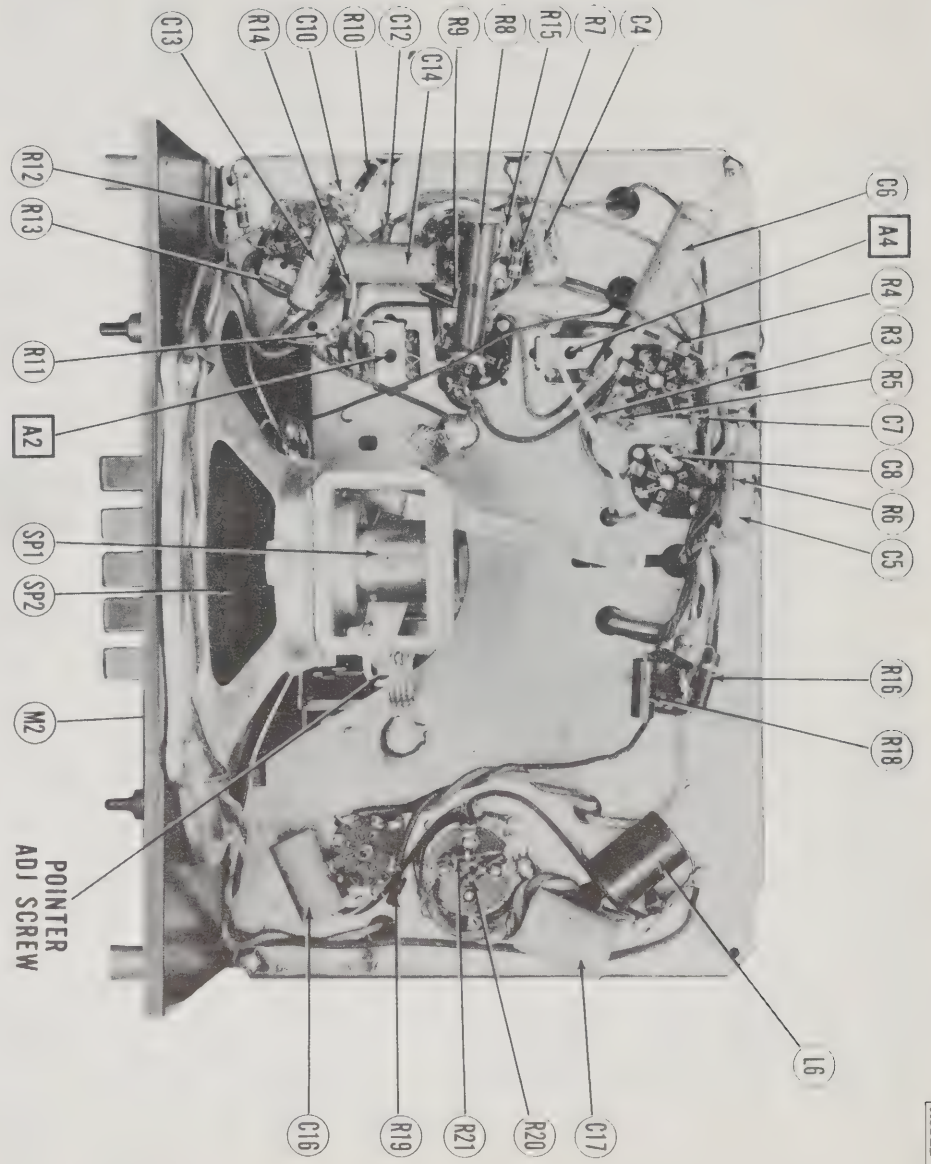
DIAL LIGHTS

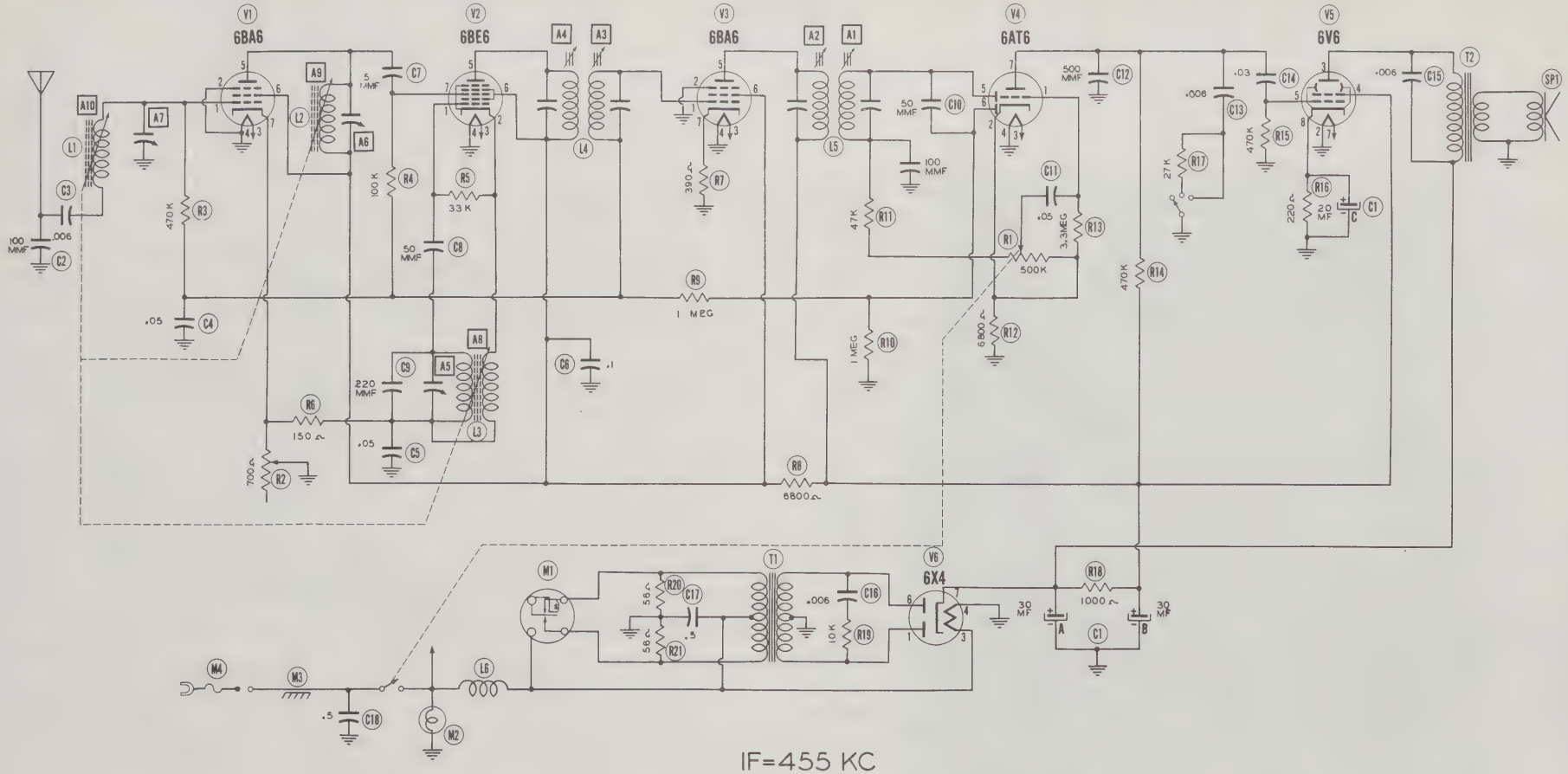
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MOPAR-MOTOROLA PART No.		
M2	Bayonet	6-8V	0.25A	Blue	65X10867		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	MOPAR-MOTOROLA PART No.	NOTES
M3	Spark Plate	1B485528	
M4	Fuse	65X12894	14 Amp.
A5	Trimmer	20A77537	Osc. Adj.
A6	Trimmer	20A481526	RF Adj.
A7	Trimmer	20A77536	Ant. Adj.
	Dial Pointer	52A580636	
	Dial Scale	34C485525	
	Knob	1X580809	
	Tuner Assembly	1X485535	

CHASSIS—BOTTOM VIEW





IF=455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	0V	0V	6VDC	0V	95VDC	95VDC	2VDC	
V 2	6BE6	§-4.5VDC	3.2VDC	6VDC	0V	95VDC	95VDC	0V	
V 3	6BA6	0V	0V	6VDC	0V	205VDC	95VDC	2.5VDC	
V 4	6AT6	0V	2VDC	6VDC	0V	5VDC	0V	57VDC	
V 5	6V6GT	0V	0V	225VDC	205VDC	0V	0V	6VDC	8VDC
V 6	6X4	270VAC	270VDC	6VDC	0V	0V	270VAC	235VDC	

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	2.8 Meg	0Ω	.5Ω	0Ω	*8KΩ	*8KΩ	150Ω	
V 2	6BE6	33KΩ	300Ω	.5Ω	0Ω	*8KΩ	*8KΩ	2.4 Meg	
V 3	6BA6	2.4 Meg	0Ω	.5Ω	0Ω	*100Ω	*8KΩ	390Ω	
V 4	6AT6	3.5 Meg	7KΩ	.5Ω	0Ω	600KΩ	1 Meg	*470KΩ	
V 5	6V6GT	0Ω	0Ω	*340Ω	*1000Ω	470KΩ	INF	.5Ω	2.0
V 6	6X4	420Ω	10KΩ	.5Ω	0Ω	INF	400Ω	140KΩ	

*Measured from Pin 7 of V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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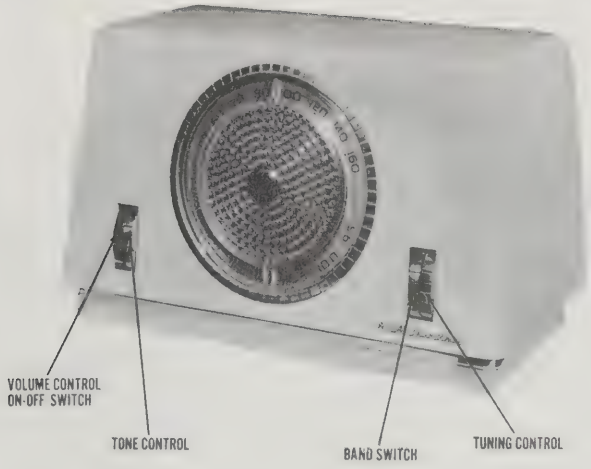
4913-9

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

RCA VICTOR MODELS
8X681, 8X682 (Ch. RC-1061)



RCA VICTOR MODEL 8X682

TRADE NAME	RCA Victor, Models 8X681, 8X682 (Ch.RC-1061)
MANUFACTURER	RCA Victor Div., Radio Corp. Of America, Camden, New Jersey.
TYPE SET	AC-DC Operated 2 Band Superheterodyne Receiver with Loop Antenna.
TUBES (SIX)	Types 12BA6 RF Amp., 12BE6 Converter, 12BA6 IF Amp., 12AT6 DET-AVC-AF, 35C5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-DC — RATING .24 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC — SHORT WAVE 9.4-12MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial frequency indication, turn tuning cap. fully closed. The small round indentation to left of "55" on dial should be in a vertical plane. Mark the dial pan with pencil to provide indicator for alignment.

Use isolation transformer if available. If not connect a .1MFD cap. in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 1 (Grid) 12BA6 (V3). Low side to B-.	455KC	BC	Tuning cap fully open	Across Voice Coil	A1,A2	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	.1MFD	High side to Pin 7 (Grid) 12BE6 (V2). Low side to B-.	455KC	BC	"	"	A3,A4	Adjust for maximum output. Do not readjust A1, A2.
3.	100MMF	High side to Ext. Ant. Lead. Low side to B-.	1600KC	BC	1600KC	"	A5	Adjust for maximum output.
4.	100MMF	"	1400KC	BC	Tune for Max Output	"	A6,A7	"
5.	100MMF	"	600KC	BC	600KC	"	A8,A9	Rock tuning gang and adjust for maximum output.
6.	.1MFD	High side to Pin 7 (Grid) 12BE6 (V2). Low side to chassis.	11.8MC	SW	11.8MC	"	A10	Adjust for maximum output. If two peaks are found, use one with minimum capacity.
7.	.1MFD	High side to Pin 7 (Grid) 12BE6 (V2). Low side to chassis.	9.5MC	SW	9.5MC	Across Voice Coil	A11	Rock tuning gang and adjust for maximum output.
8.	50MMF	High side to Ext. Ant. Lead. Low side to chassis.	11.8MC	SW	11.8MC	"	A12	Adjust for maximum output. If two peaks are found, use one with minimum capacity.
9.	50MMF	"	9.5MC	SW	9.5MC	"	A13	Rock tuning gang and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amp.	12BA6	12BA6	7BK	
V4	DET-AVC-AF	12AT6	12AT6	7BT	
V5	Power Output	35C5	35C5		
V6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	80	150	73520	AF888D†	UP8415		DY-8040	EL-340	■Filter
B	50	150					-150		▲Filter
C2	360	500	64641	1469-00035					Fixed Padder
C3	150	500	39632	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	RF Coupling
C4	.05	200	72596	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C5	56		71924	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C6	.05	200	72596	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C7	150	500	39632	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Filter
C8	.02	200	71928	P488-02	GT2S2		ST-4-02	TM-12	Audio Coupling
C9	330	500	72571	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-33	AF Plate Bypass
C10	.005	400	72791	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C11	.005	400	72791	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Tone Comp.
C12	.02	200	70611	P488-02	GT2S2		ST-4-02	TM-12	Output Plate Bypass
C13	.05	400	70615	P488-05	GT4S5		ST-4-05	TM-15	Rect. Plate Bypass
C14	.1	400	70617	P488-1	GT4P1		ST-4-1	TM-1	Line Isolation

†Parallel Sections To Obtain Desired Capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1	500KΩ	½	73543			Volume control and switch
R2	1 Meg	½	73544			Tone control

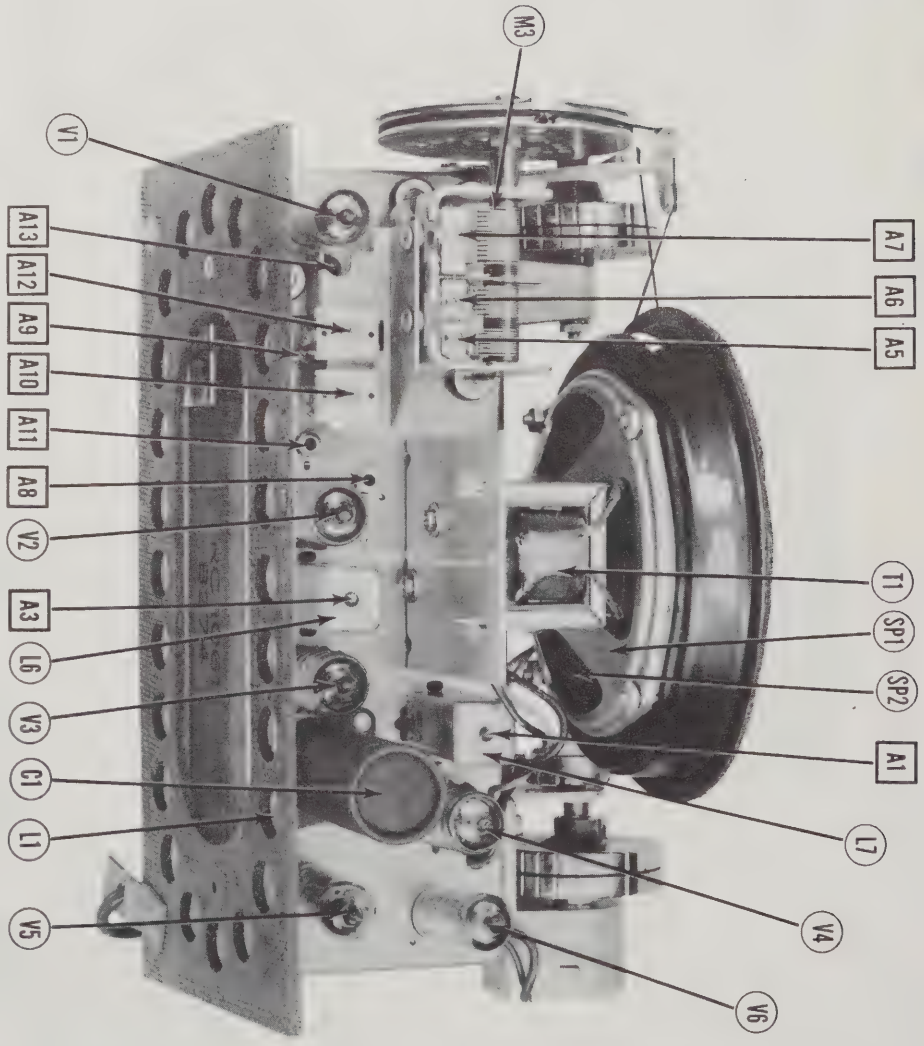
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	IDENTIFICATION CODES
R3	470Ω	½		BTS-470	RF Cathode
R4	8200Ω	½		BTS-8200	RF Coil Shunt
R5	33KΩ	½		BTS-33K	Osc. Grid
R6	1 Meg	½		BTS-1 Meg	AVC Network
R7	150Ω	½		BW-½-150	IF Cathode
R8	2.2 Meg	½		BTS-2.2 Meg	AVC Network
R9	33KΩ	½		BTS-33K	Diode Filter
R10	33KΩ	½		BTS-33K	Diode Load
R11	4.7 Meg	½		BTS-4.7 Meg	AF Grid
R12	220KΩ	½		BTS-220K	AF Plate
R13	470KΩ	½		BTS-470K	Output Grid
R14	150Ω	½		BW-½-150	Output Cathode
R15	1200Ω	1		BTA-1200	Filter
R16	33Ω		73237		Surge Limiter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: RCA PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T1	2200Ω	3.5Ω	240Ω Tap @ 13Ω	.7Ω	72296	A-3330	RO-3	A-3031	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA RCA PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	FIELD	V.C. IMP.	74103	ST-105 MOD.P5-X*		*Drill And Tap Magnet Frame
	PM	3.5Ω				
SP2	CONE DIA.	V.C. DIA.				
	4-5/8"	9/16"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA RCA PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Loop Ant.	0Ω	1.8Ω	73512	
L2	AM RF Coil	70Ω	7.5Ω	73518	
L3	SW Ant.Coil	0Ω		73519	
L4	AM Osc.Coil	.5Ω	6Ω	73516	14-1060
L5	SW Osc.Coil	0Ω	0Ω	73517	
L6	Input IF	13Ω	15Ω	73036	16-6678
L7	Output IF	17Ω	12Ω	73037	16-6678‡

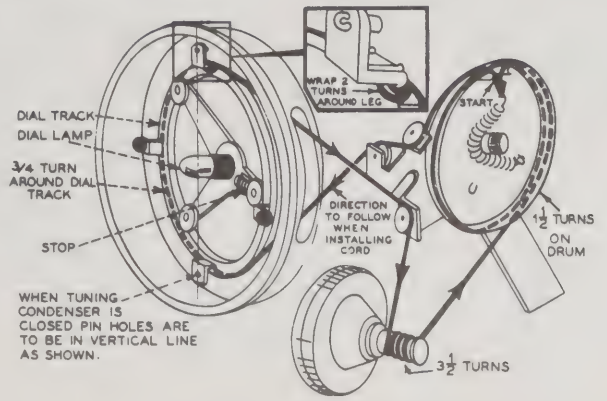
‡Add Cap. From Black Lead To Ground, Equivalent To That Of One In Original Transformer Or The Same Cap. If Possible.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA RCA PART No.		NOTES
M1	Bayonet	6-8V	0.15A	Brown	31480		Type #47

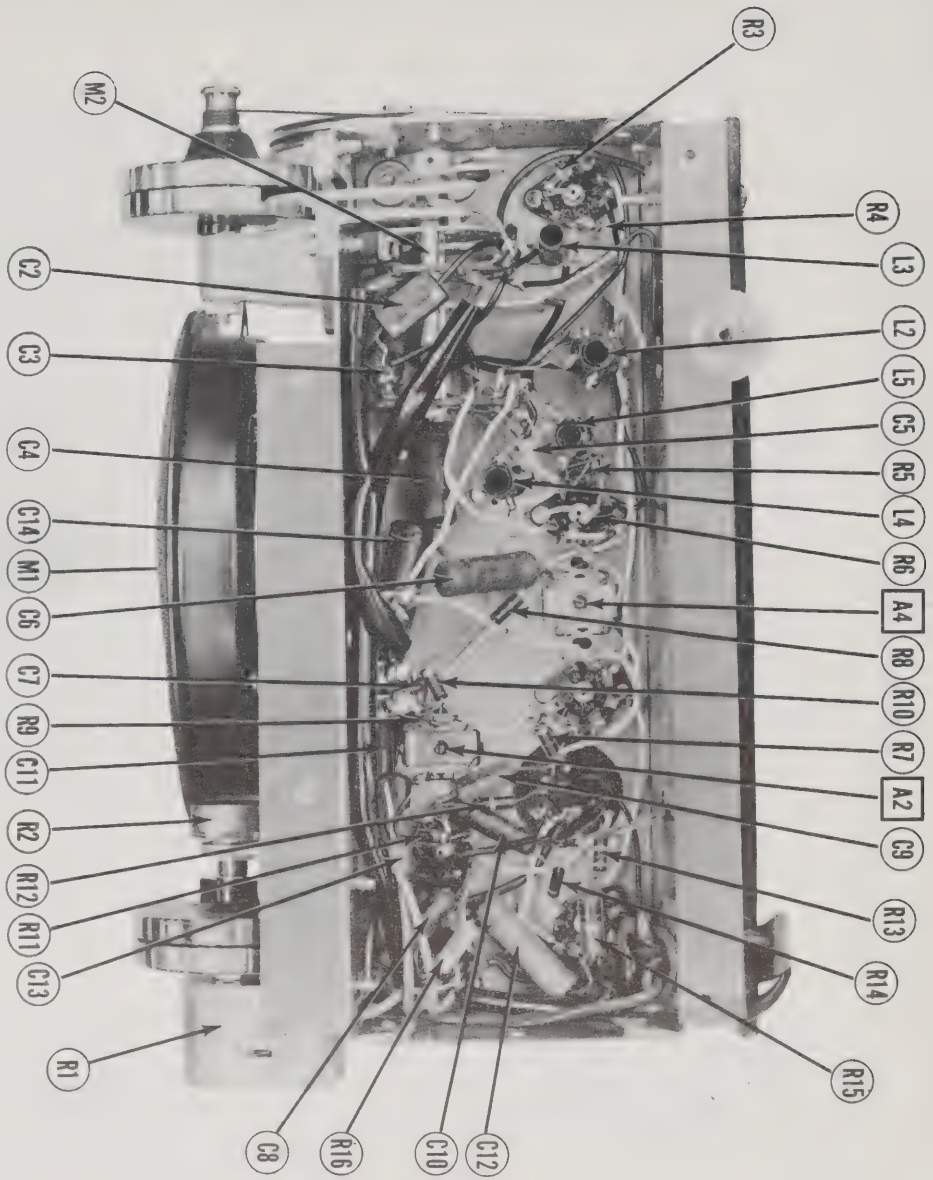
MISCELLANEOUS

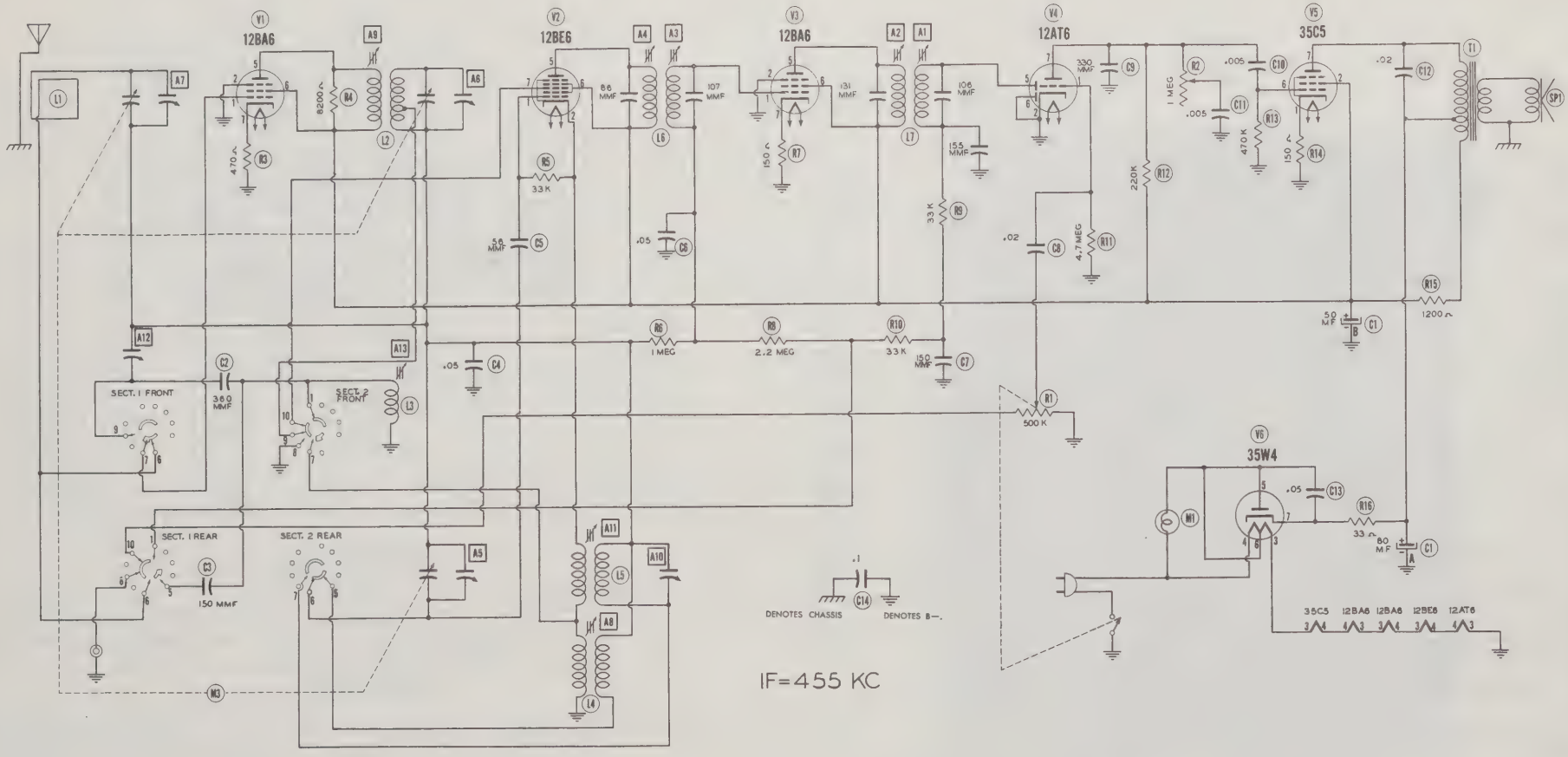
ITEM No.	PART NAME	RCA PART No.	NOTES
M2	Switch	73535	Band
M3	3 Gang Var. Cap.	73513	(18-382MMF, 20-216MMF, 15-104MMF)
	Dial	73522	
	Knob	73538	Band Switch
	Knob	73541	Tone
	Knob	73537	Tuning
	Knob	73542	Volume/ON-OFF Switch
	Cabinet	Y2002	Model 8X681
	Cabinet	Y2003	Model 8X682


WRAP 2 TURNS AROUND LEG
START
DIAL TRACK
DIAL LAMP
¾ TURN AROUND DIAL TRACK
STOP
DIRECTION TO FOLLOW WHEN INSTALLING CORD
½ TURNS ON DRUM
WHEN TUNING CONDENSER IS CLOSED PIN HOLES ARE TO BE IN VERTICAL LINE AS SHOWN.
3½ TURNS

DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	-.2VDC	0V	39VAC	26VAC	83VDC	83VDC	2.5VDC
V 2	12BE6	§-10VDC	0V	26VAC	13VAC	83VDC	83VDC	-.2VDC
V 3	12BA6	-.1VDC	0V	38VAC	50VAC	83VDC	83VDC	1.1VDC
V 4	12AT6	-.3VDC	0V	0V	13VAC	-.6VDC	0V	55VDC
V 5	35C5	4.6VDC	0V	50VAC	85VAC	0V	83VDC	103VDC
V 6	35W4	113VDC	0V	65VAC	117VAC	112VAC	112VAC	113VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	3.7 Meg	0Ω	36Ω	24Ω	1.2KΩ*	1.2KΩ*	470Ω
V 2	12BE6	33KΩ	.5Ω	24Ω	13Ω	1.2KΩ*	1.2KΩ*	3.7 Meg
V 3	12BA6	2.7 Meg	0Ω	36Ω	48Ω	1.2KΩ*	1.2KΩ*	150Ω
V 4	12AT6	4.7 Meg	0Ω	0Ω	13Ω	500KΩ	0Ω	220KΩ*
V 5	35C5	120Ω	470KΩ	48Ω	80Ω	470KΩ	1.2KΩ*	270Ω*
V 6	35W4	400KΩ	INF	80Ω	110Ω	105Ω	105Ω	400KΩ

*Measured from Pin 7 of Tube 6 (35W4)

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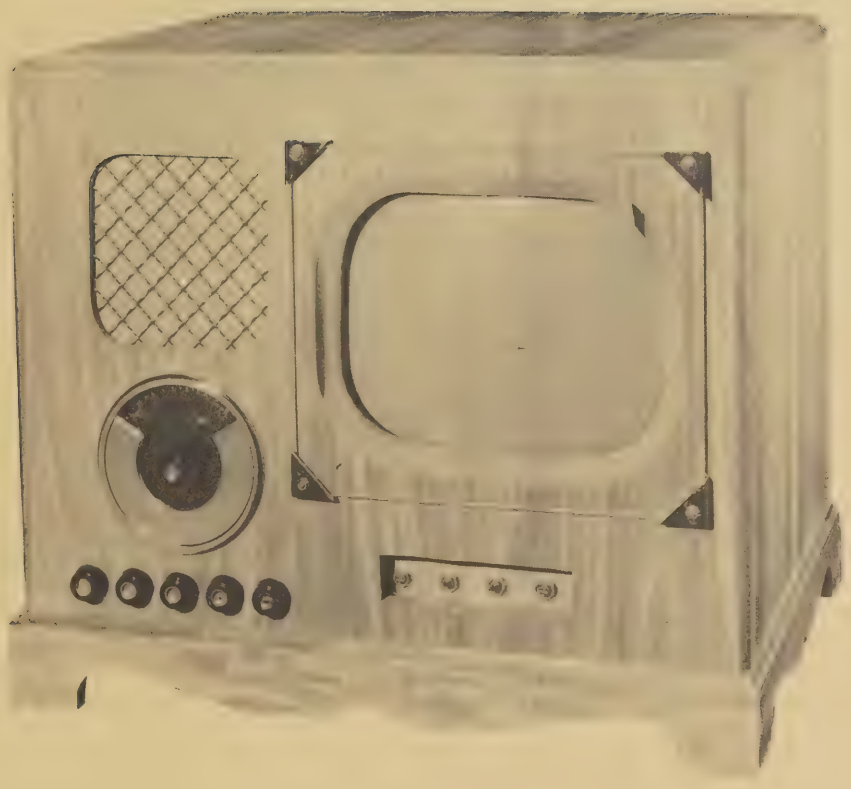
4913-10

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

REMBRANDT MODELS 721, 1606, 1606-15, 1950

REMBRANDT MODELS 721, 1606, 1606-15, 1950



MODEL 1950

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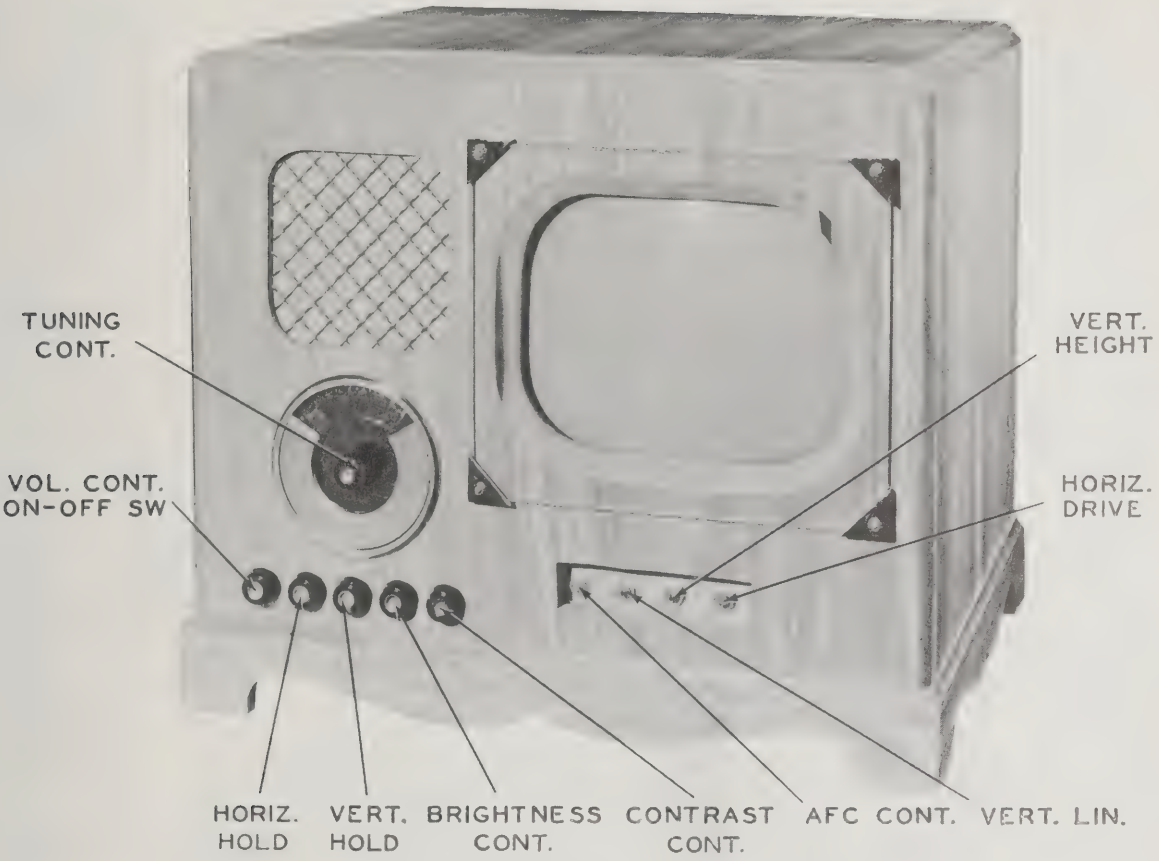

REMBRANDT MODEL 1950

TRADE NAME	Rembrandt Models 721, 1606, 1606-15, 1950
MANUFACTURER	Remington Radio Corp., White Plains, New York
TYPE SET	Television and FM Receiver
TUBES	Twenty-Five
POWER SUPPLY	105-125 Volts, 60 Cycle AC RATING: 2.25 Amps. @ 117 Volts
TUNING RANGE—	54-216MC

INDEX

	Page
Alignment Instructions	6
Block Diagram	13
Disassembly Instructions	6
Parts List and Description	14,15,16
Photographs	
Cabinet-Rear View	16
Capacitor Identification	11,18
Chassis-Top View	3
Photographs (continued)	
RF Tuner-Bottom View	7
RF Tuner-Left Side	10
Resistor Identification	13,17
Trans., Inductor and Alignment Identification	4,9
Removal of Picture Tube	6
Schematic	2
Tube Placement Chart	5
Voltage and Resistance Measurements	8

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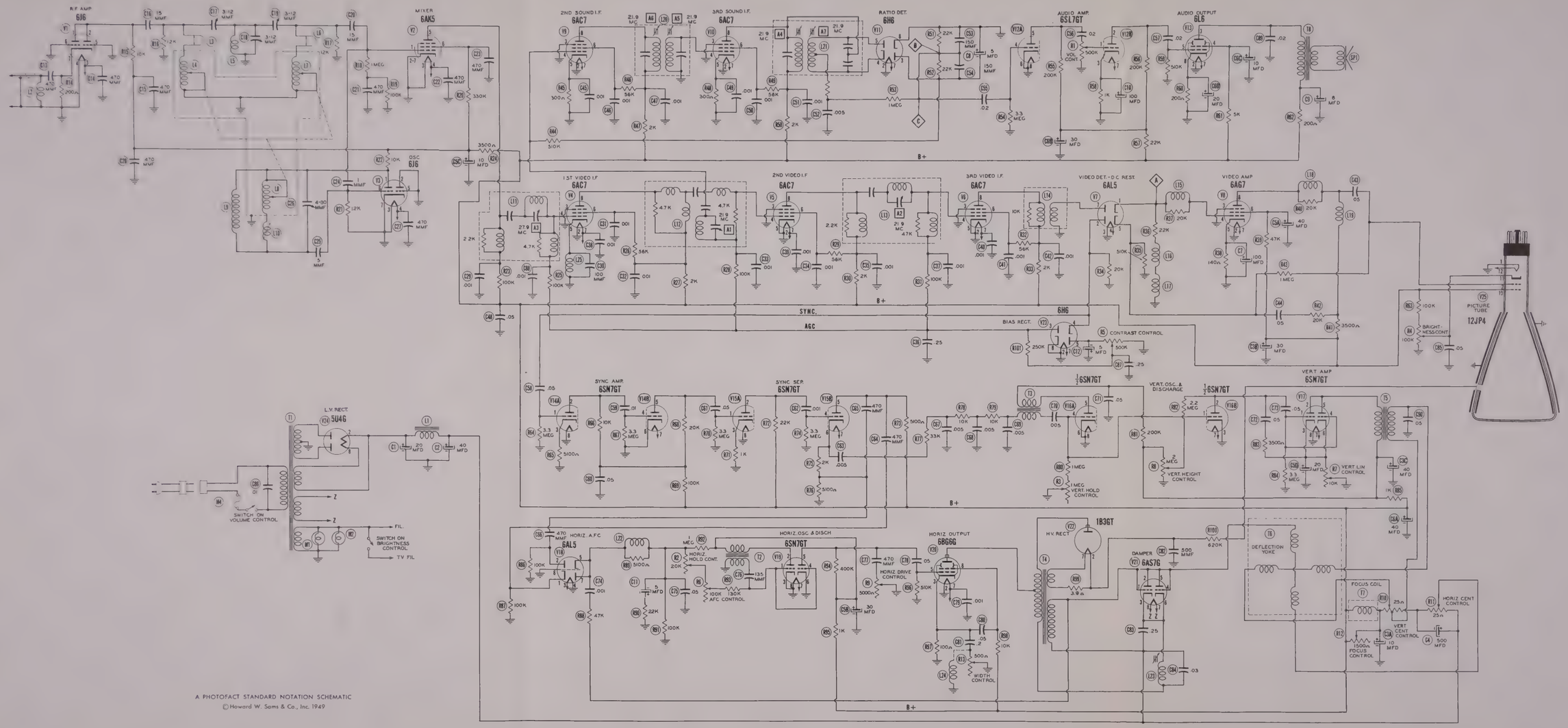
DATE 7/49 4913-11 SET #65 FOLDER #11

REMBRANDT MODELS
721, 1606, 1606-15, 1950



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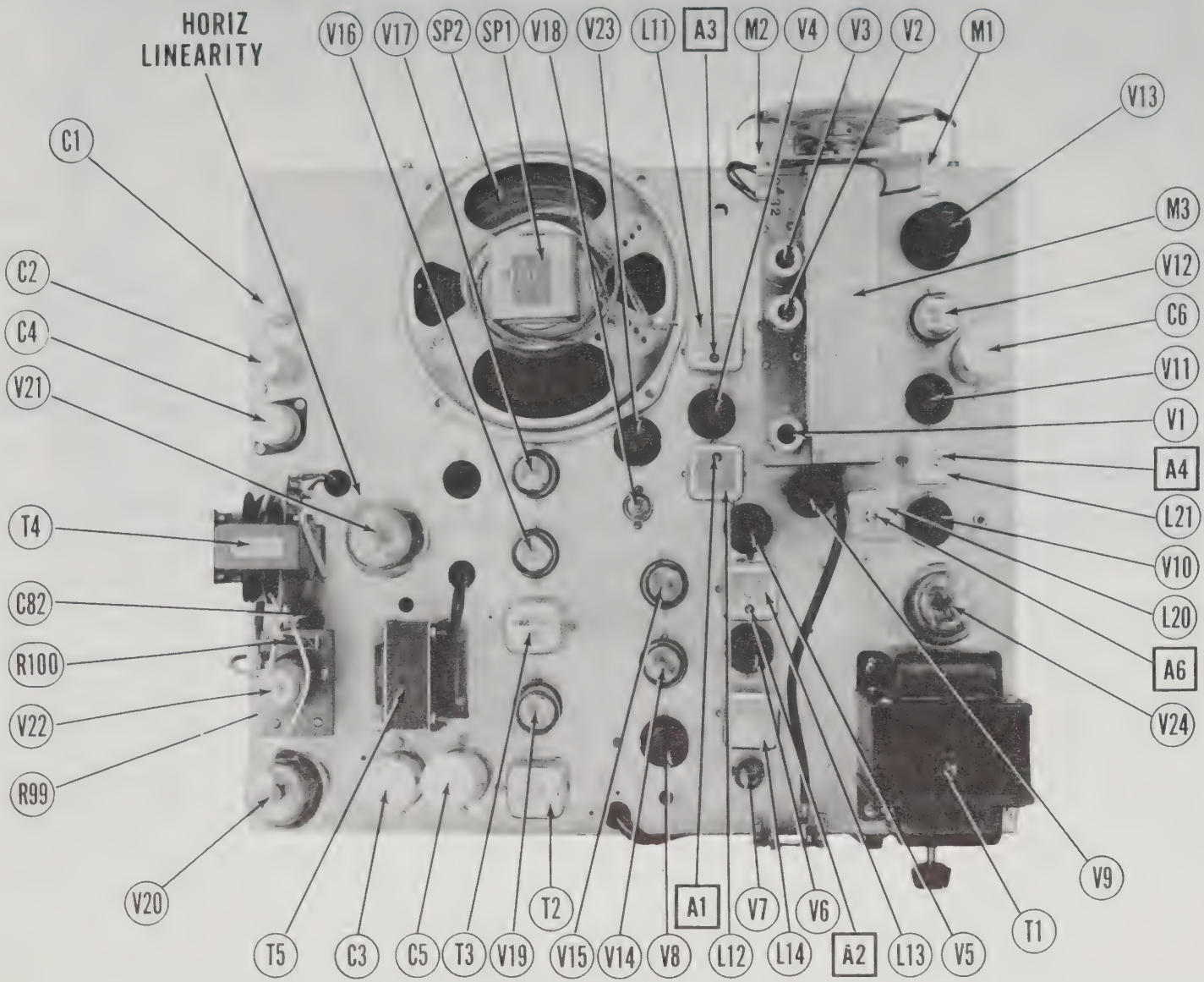
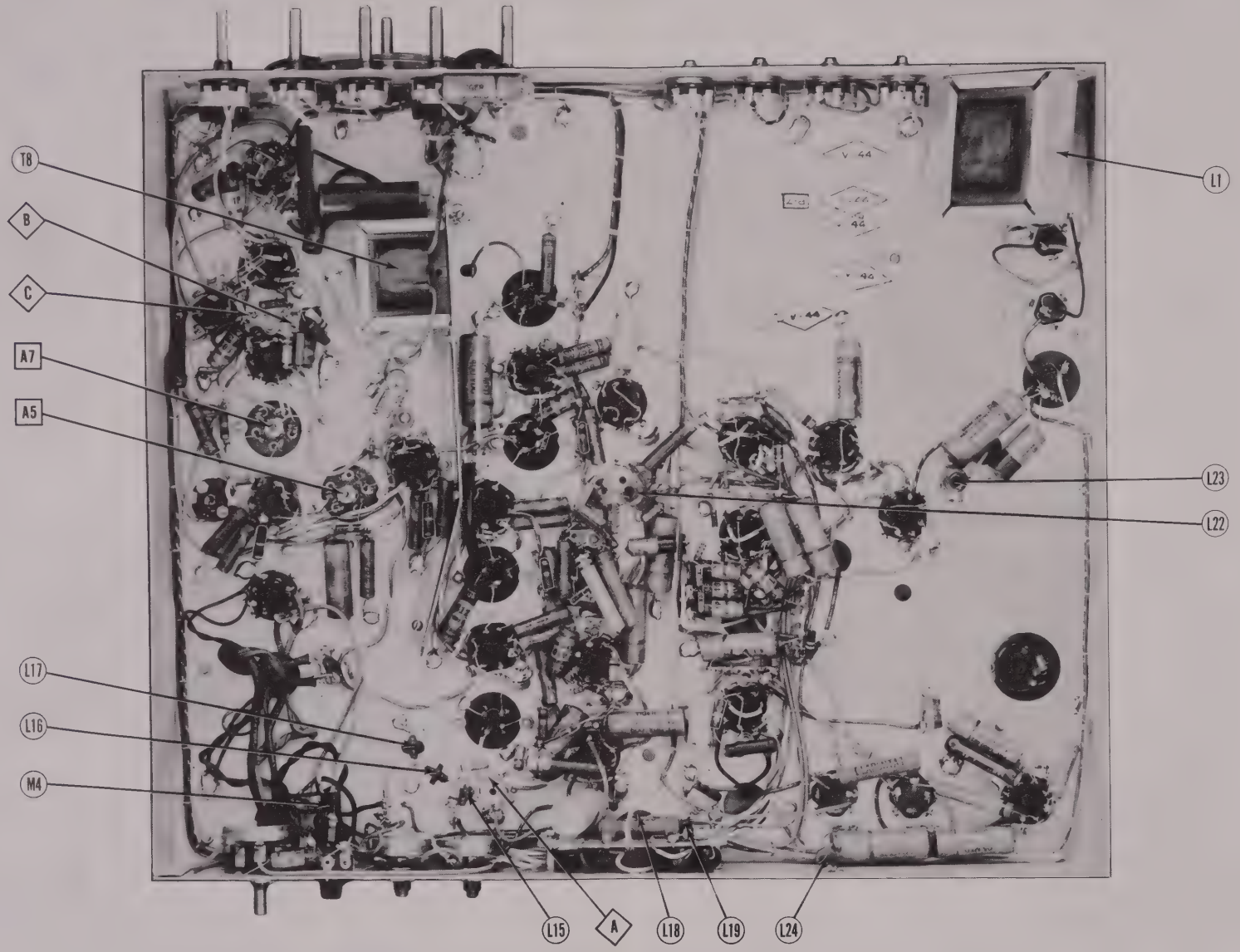
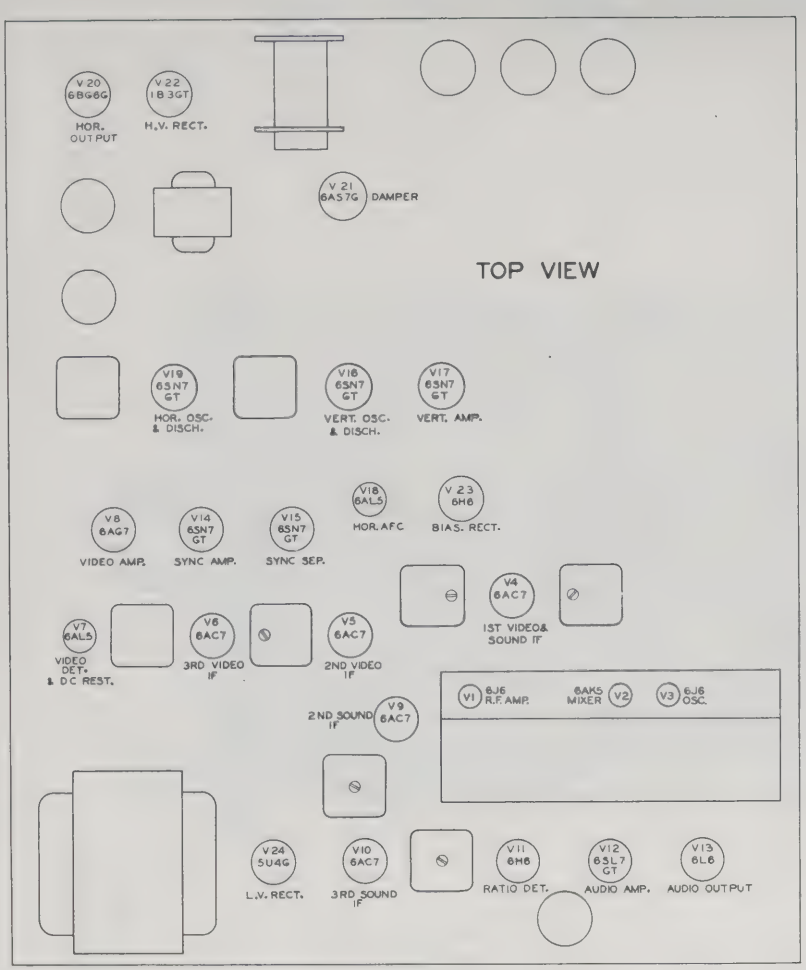
REMBRANDT MODELS
721, 1606, 1606-15, 1950

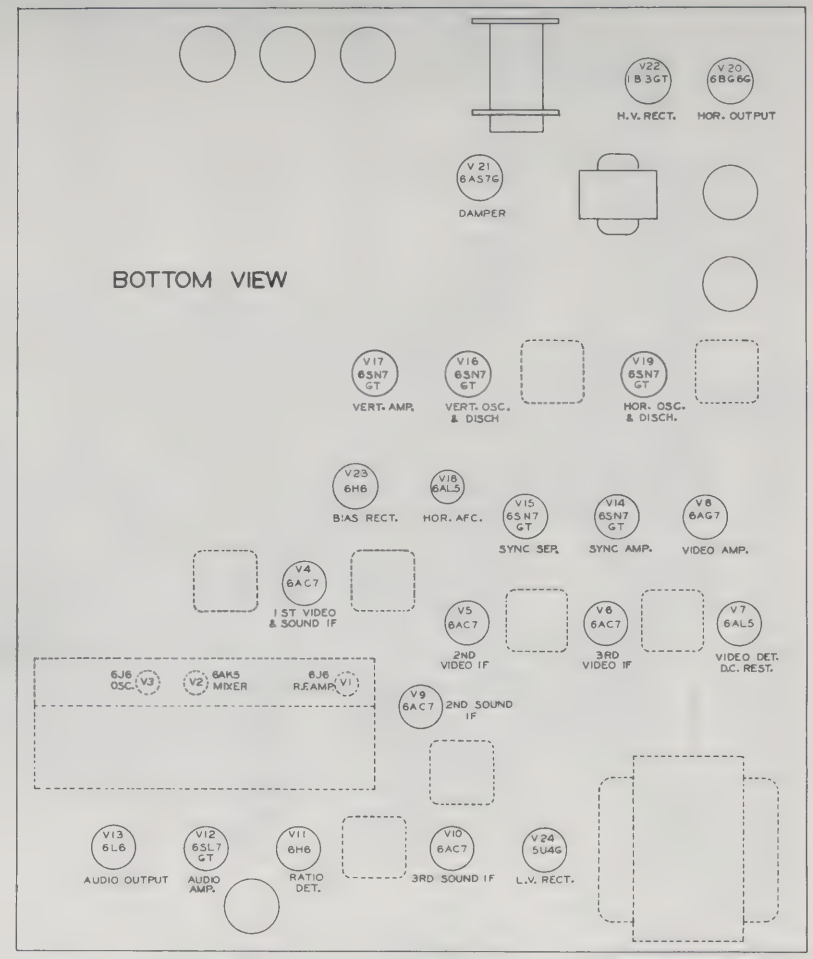


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

VIDEO IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Remove oscillator tube V3. Partially remove shield from the mixer tube so it is not grounded. Connect the high side of the signal generator to this ungrounded tube shield and chassis. Remove horizontal oscillator (V19) tube to disable HV supply.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.		High side to ungrounded tube shield placed over mixer tube (V2). Low side to chassis.	21.9MC (Very accurately)	Any	DC Probe to Point (A) Common to chassis.	A1,A2	Adjust for minimum deflection.
2.		"	27.9MC (Very accurately)	"	"	A3	" " " "

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal amplifier of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.		High side to ungrounded tube shield placed over mixer tube (V2). Low side to chassis	24MC (10MC Sweep)	21.9MC 26.4MC 27.9MC	Any	DC Probe to Point (A) Common to chassis.		Check response pattern obtained to see that it correspondes with Fig 1. Also check location of markers.

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.		High side to ungrounded tube shield placed over mixer tube (V2). Low side to chassis	21.9MC (Very accurately)	Any	DC Probe to Point (B) Common to chassis.	A4, A5 A6	Adjust for maximum deflection.
5.		"	"	"	DC Probe to Point (C) Common to Point (B)	A7	Adjust for zero reading. A positive and negative reading is obtained on either side of the correct setting. Repeat the adjustments of A4 and A7.

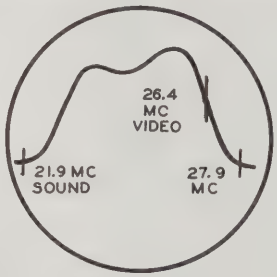


FIG. 1

DISASSEMBLY INSTRUCTIONS

1. Remove six set screw type control knobs.
2. Remove five wood screws holding back cover. Remove back cover.
3. Remove deflection coil plug from chassis, picture tube plug from picture tube and HV lead from picture tube.
4. Remove speaker plug from chassis.
5. Remove two wing nuts from bolts holding chassis. Remove bolts and remove chassis from rear of cabinet.
6. Remove four wood screws holding speaker. Remove speaker.

REMOVAL OF PICTURE TUBE

1. Remove chassis as shown in disassembly instructions.
2. Remove two wood screws holding rear support. Remove rear support by sliding it off end of picture tube.
3. Remove four wood screws holding front support. Remove front support by sliding over end of picture tube.
4. Loosen screws holding clamps at front of picture tube. Remove picture tube.

RF TUNER-BOTTOM VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	140VDC	140VDC	6.3VAC	0V	0V	0V	2.5VDC		
V 2	6AK5	-1.2VDC	0V	0V	6.3VAC	44VDC	65VDC	0V		
V 3	6J6	140VDC	0V	0V	6.3VAC	0V	§-8.4VDC	0V		
V 4	6AC7	0V	0V	0V	-5.2VDC	0V	340VDC	6.3VAC	330VDC	
V 5	6AC7	0V	0V	0V	-5.2VDC	0V	340VDC	6.3VAC	340VDC	
V 6	6AC7	0V	0V	0V	-5VDC	0V	320VDC	6.3VAC	330VDC	
V 7	6AL5	.1VDC	0V	0V	6.3VAC	.5VDC	0V	0V		
V 8	6AG7	0V	0V	0V	.1VDC	3VDC	135VDC	6.3VAC	260VDC	
V 9	6AC7	0V	0V	0V	-.1VDC	3VDC	225VDC	6.3VAC	320VDC	
V 10	6AC7	0V	0V	0V	0V	3VDC	195VDC	6.3VAC	320VDC	
V 11	6H6	0V	0V	-.3VDC	-.2VDC	-.2VDC	0V	6.3VAC	0V	
V 12	6SL7GT	0V	100VDC	.9VDC	-.6VDC	100VDC	0V	6.3VAC	0V	
V 13	6L6	0V	0V	310VDC	300VDC	0V	340VDC	6.3VAC	18VDC	
V 14	6SN7GT	0V	70VDC	3VDC	-.5VDC	32VDC	0V	6.3VAC	0V	
V 15	6SN7GT	0V	210VDC	6.6VDC	0V	330VDC	15VDC	6.3VAC	0V	
V 16	6SN7GT	-46VDC	-.1VDC 32VDC	0V	-46VDC	200VDC	0V	6.3VAC	0V	
V 17	6SN7GT	0V	220VDC	2VDC 18VDC	0V	220VDC	2VDC 18VDC	6.3VAC	0V	
V 18	6AL5	14VDC	-15VDC	6.3VAC	0V	2.7VDC	0V	2.7VDC		
V 19	6SN7GT	-33VDC	320VDC	0V	33VDC	125VDC	0V	6.3VAC	0V	
V 20	6BG6G	230VDC	0V	7VDC	0V	-6.5VDC	0V	6.3VAC	230VDC	TOP CAP †
V21A	6AS7	330VDC	330VDC	400VDC	330VDC	330VDC	400VDC	6.3VAC	0V	
V 22	1B3GT	† DO NOT MEASURE								
V 23	6H6	0V	0V	-6VDC	0V	-8VDC	0V	6.3VAC	6.3VAC	
V 24	5U4G	0V	360VDC	0V	390VAC	0V	390VAC	0V	360VDC	
V 25	12JP4	0V	.1VDC	PIN 10 310VDC	PIN 11 145VDC	PIN 12 6.3VAC				

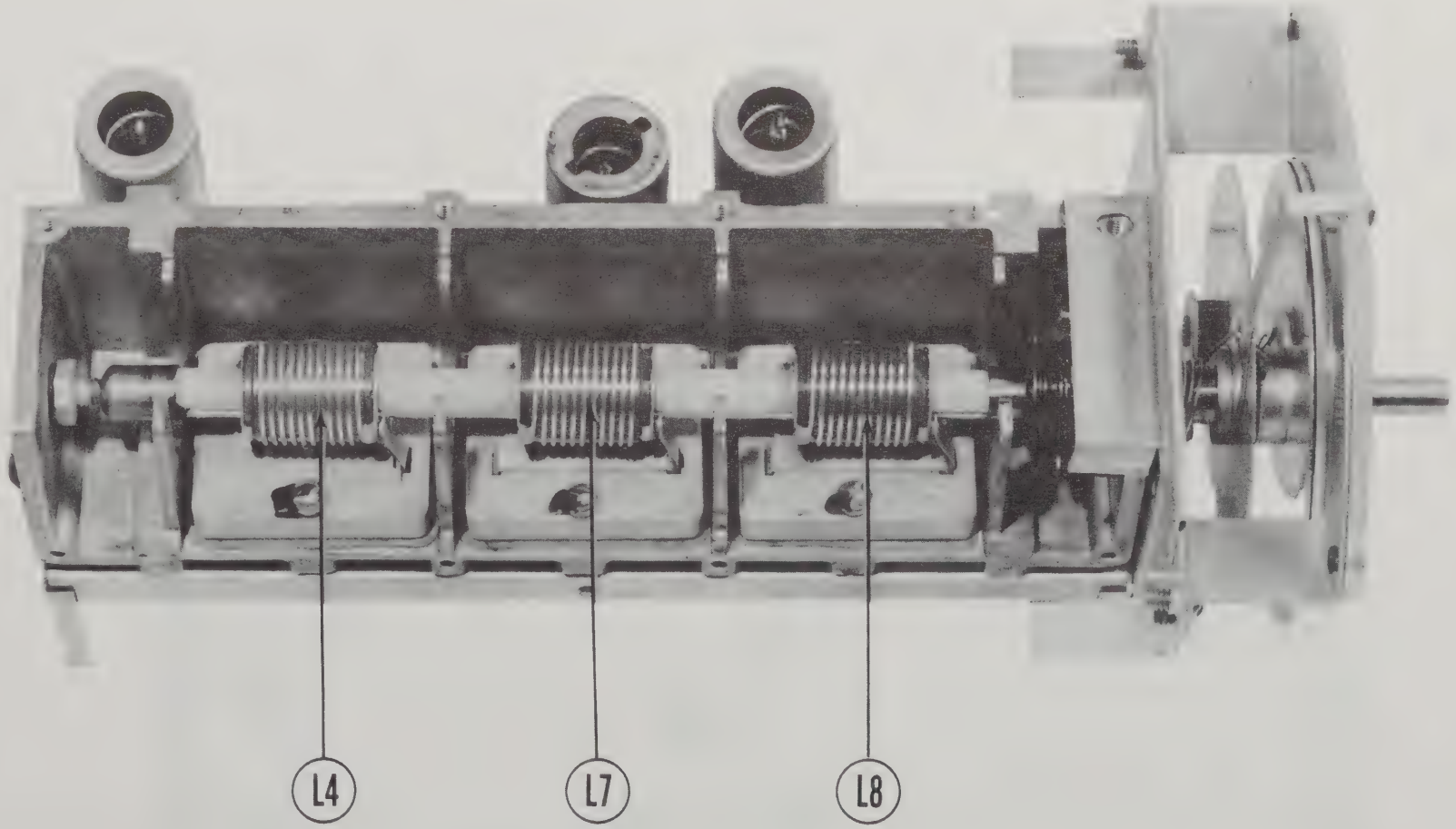
§ Taken with vacuum tube voltmeter.
† Do not measure

RESISTANCE READINGS

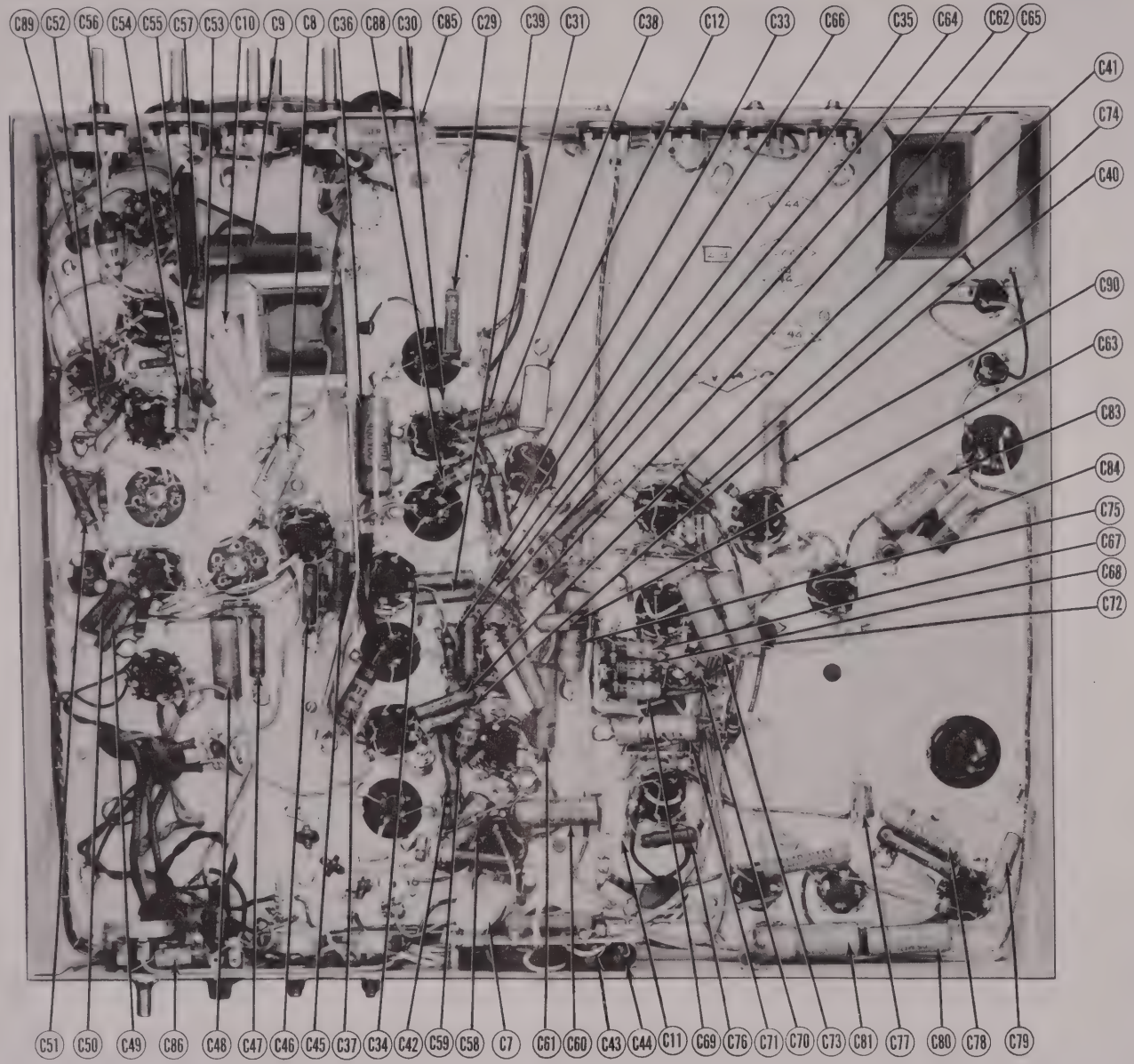
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	*13KΩ	*13KΩ	.2Ω	0Ω	0Ω	0Ω	200Ω		
V 2	6AK5	1 Meg.	0Ω	0Ω	.2Ω	*150KΩ	*330KΩ	0Ω		
V 3	6J6	*13KΩ	0Ω	0Ω	.2Ω	0Ω	12KΩ	0Ω		
V 4	6AC7	0Ω	0Ω	0Ω	800KΩ	6Ω	*60KΩ	.2Ω	‡2.2KΩ	
V 5	6AC7	0Ω	0Ω	0Ω	800KΩ	0Ω	*60KΩ	.2Ω	*2.5KΩ	
V 6	6AC7	0Ω	0Ω	0Ω	800KΩ	0Ω	*60KΩ	.2Ω	*2.2KΩ	
V 7	6AL5	3.3KΩ	22KΩ	0Ω	.2Ω	500KΩ	0Ω	.2Ω		
V 8	6AG7	0Ω	0Ω	0Ω	3.3KΩ	140Ω	*45KΩ	.2Ω	*3.8KΩ	
V 9	6AC7	0Ω	0Ω	0Ω	500KΩ	300Ω	*60KΩ	.2Ω	*2.2KΩ	
V 10	6AC7	0Ω	0Ω	0Ω	.2Ω	300Ω	*60KΩ	.2Ω	*2.2KΩ	
V 11	6H6	0Ω	0Ω	40KΩ	1.4 Meg.	1.4 Meg.	Inf.	.2Ω	0Ω	
V 12	6SL7GT	80Ω	*220KΩ	1000Ω	3 Meg.	*220KΩ	0Ω	.2Ω	0Ω	
V 13	6L6	0Ω	0Ω	*500Ω	*5.5KΩ	500KΩ	*150Ω	.2Ω	200Ω	
V 14	6SN7GT	3.3 Meg.	*110KΩ	5KΩ	3.3 Meg.	*120KΩ	0Ω	.2Ω	0Ω	
V 15	6SN7GT	3.3 Meg.	*22KΩ	1000Ω	3.3 Meg.	*5KΩ	7KΩ	.2Ω	0Ω	
V 16	6SN7GT	1 Meg.	*2.6 Meg *2 Meg.	0Ω	1 Meg.	*200KΩ	0Ω	.2Ω	0Ω	
V 17	6SN7GT	3.3 Meg.	*1500Ω	10KΩ 36Ω	3.3 Meg.	*1500Ω	10KΩ 36Ω	.2Ω	0Ω	
V 18	6AL5	100KΩ	100KΩ	.2Ω	0Ω	100KΩ	0Ω	100KΩ		
V 19	6SN7GT	350KΩ 240KΩ	*1000Ω	0Ω	350KΩ 240KΩ	*400KΩ	0Ω	.2Ω	0Ω	
V 20	6BG6G	*11KΩ	0Ω	100Ω	Inf.	500KΩ	Inf.	.2Ω	*11KΩ	TOP CAP ‡200Ω
V21A	6AS7	*100Ω	*100Ω	* Inf.	*100Ω	*100Ω	* Inf.	.2Ω	0Ω	
V 22	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ‡360Ω
V 23	6H6	0Ω	0Ω	750KΩ	22KΩ	500KΩ	Inf.	.2Ω	.2Ω	
V 24	5U4G	Inf.	100KΩ	Inf.	36Ω	Inf.	34Ω	Inf.	100KΩ	
V 25	12JP4	0Ω	1.6 Meg	PIN 10 *150Ω	PIN 11 *60KΩ	PIN 12 .2Ω				

* Measured from pin 2 of V24
‡ Measured from pin 6 of V21

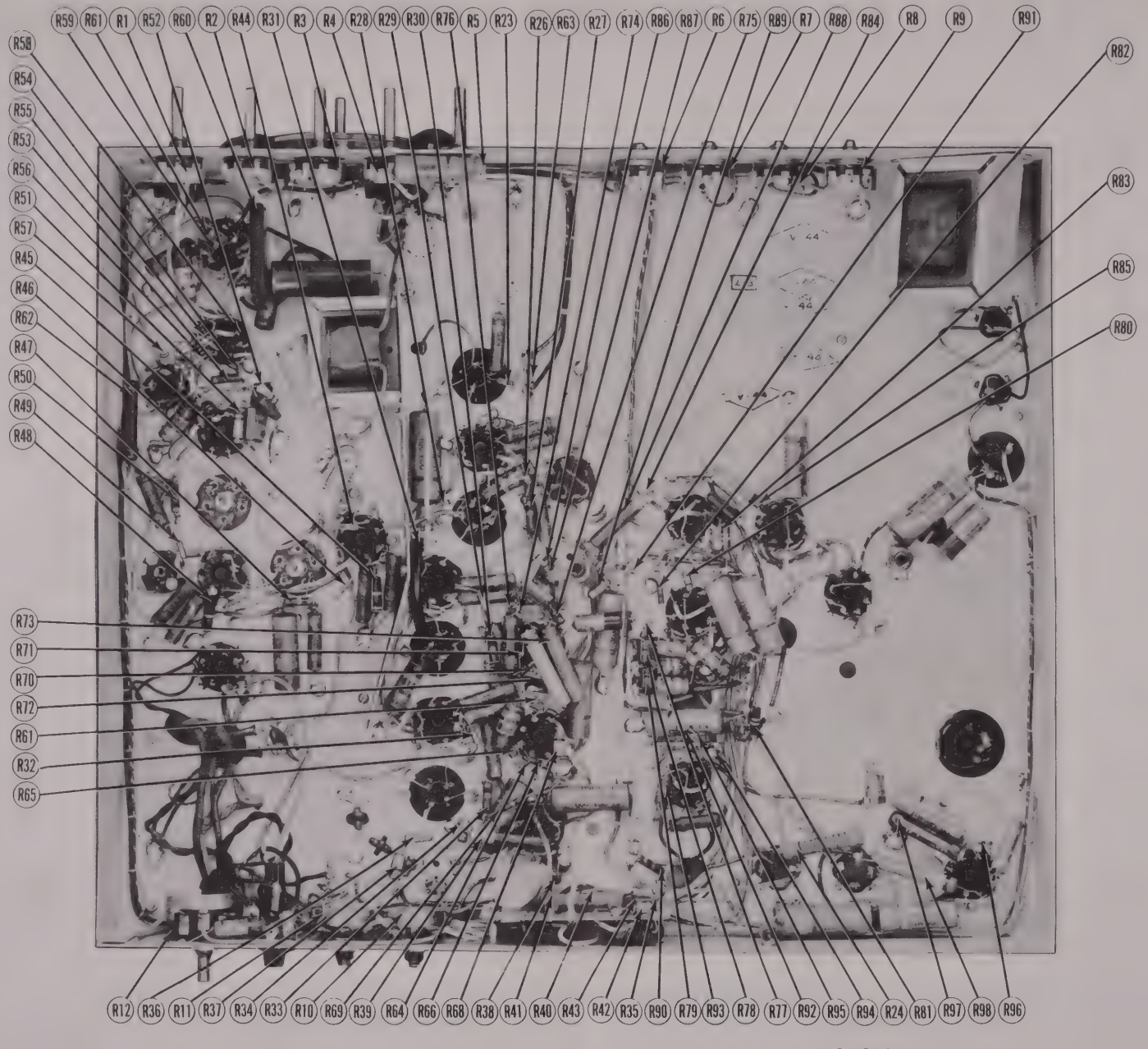
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



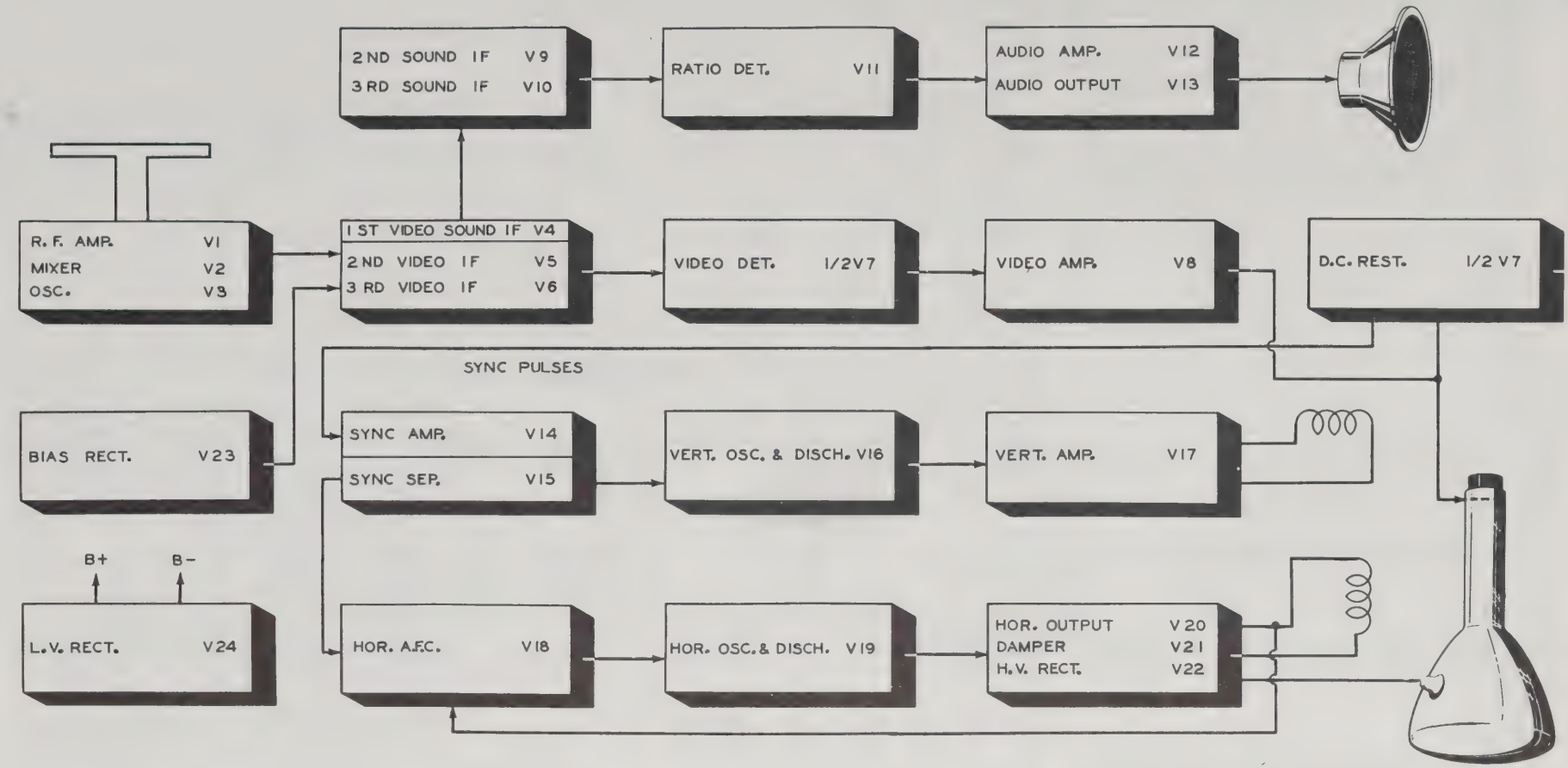
RF TUNER-LEFT SIDE



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: REMBRANDT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.		6J6	7BF	
V2	Mixer		6AK5	7BD	
V3	Oscillator		6J6	7BF	
V4	1st Video & Sound IF		6AC7	8N	
V5	2nd Video IF		6AC7	8N	
V6	3rd Video IF		6AC7	8N	
V7	Video Det.-DC Restr.		6AL5	6BT	
V8	Video Amp.		6AG7	8Y	
V9	2nd Sound IF		6AC7	8N	
V10	3rd Sound IF		6AC7	8N	
V11	Ratio Det.		6H6	7A	
V12	Audio Amp.		6SL7GT	8BD	
V13	Audio Output		6L6	7AC	
V14	Sync. Amp.		6SN7GT	8BD	
V15	Sync. Sep.		6SN7GT	8BD	
V16	Vert. Osc. & Disch.		6SN7GT	8BD	
V17	Vert. Amp.		6SN7GT	8BD	
V18	Hor. AFC		6AL5	6BT	
V19	Hor. Osc. & Discr.		6SN7GT	8BD	
V20	Power Output		6P3GG	5BT	
V21	Damper		6A5G	4CG	
	B Damper		6W4GT	3C	
V22	HV Rect.		1B3GT	3C	
V23	Bias Rect.		6H6	7Q	
V24	HV Rect.		5U4G	5T	
V25	Picture Tube		12JP4		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: REMBRANDT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	20	450		AF4J	UP2045			EL-2	Filter
C2	40	450		AF8J	UP4045			TVL-45	"
C3A	10	450		AF862J4A	UP4314			EL-424	▲ Filter
B	30	450			5C				■ Filter
C	40	450							● Decoupling
C4	500	12		PRS12/500	UP500-25			EL-152	Hor. Cent. Cont. Bypass
C5A	40	450		AF862J4A	UP4314			EL-424	● V. Amp. Screen Bypass
B	30	450			5C				■ Hor. Osc. Plate Dec.
C	10	450							▲ Decoupling
D	20	25							Vert. Amp. Cath. Bypass
C6A	40	450		AF862J4A	UP4314			EL-424	● Filter
B	30	450			5C				■ Decoupling
C	10	450							▲ Output Screen Bypass
D	20	25							Output Cath. Bypass
C7	100	25		PRS25/100	BRH251A			TVA-8	V. Amp. Cath. Bypass
C8	5	150		PRS150/4	BR815			UT-41	Stabilizing Cap.
C9	8	450		PRS450/8	BR845			TVA-21	Output Plate Bypass
C10	100	25		PRS25/100	BRH251A			TVA-8	AF Cath. Bypass
C11	5	150		PRS150/4	BR815			UT-41	AFC Filter
C12	5	150		PRS150/4	BR815			UT-41	Bias Filter
C13	470								Ant. Coupling
C14	470								RF Fil. Bypass
C15	470								RF Bypass
C16	15					GP1K-15			RF Coupling
C17	3-12					557-3-12			RF Var. Padder. NPO
C18	3-12					557-3-12			RF Var. Trimmer NPO
C19	3-12					557-3-12			RF Var. Padder NPO
C20	15					GP1K-15			RF Coupling
C21	470					GP2K-500			RF Bypass
C22	470					GP2K-500			Mixer Fil. Bypass
C23	470					GP2K-500			Mixer Screen Bypass
C24	1								Osc. Coupling
C25	5					NP0K-5			Osc. Grid Cap.
C26	4-30					5S2A-4-30			Osc. Var. Trimmer N500
C27	470					GP2K-500			Osc. Fil. Bypass
C28	470					GP2K-500			RF Bypass
C29	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Mixer Plate Decoup.
C30	100			1468-0001	5W5T1	GP2K-100	MO.5-31	1FM-31	1st V. IF Cath. Byp.
C31	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	1st V. IF Screen Byp.
C32	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	1st V. IF Decoupling
C33	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Bias Filter
C34	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	2nd V. IF Screen Byp.
C35	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	2nd V. IF Decoupling
C36	.25	400		P488-25	GT4P25		ST-4-25	TC-2	Bias Filter
C37	.001	600		P688-001	GT6D1		ST-6-001	TM-21	" "
C38	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	1st V. IF Fil. Bypass
C39	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	2nd V. IF Fil. Bypass
C40	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	3rd V. IF Fil. Bypass
C41	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	3rd V. IF Screen Byp.
C42	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	3rd V. IF Decoupling
C43	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Video Coupling
C44	.05	600		P688-05	GT6S5		ST-6-05	TM-15	" "
C45	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	2nd S. IF Cath. Bypass.
C46	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	2nd S. IF Screen Bypass
C47	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	2nd S. IF Decoupling
C48	.05	600		P688-05	GT6S5		ST-6-05	TM-15	RF Bypass
C49	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	3rd S. IF Cath. Bypass
C50	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	3rd S. IF Screen Bypass
C51	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	3rd S. IF Decoupling
C52	.005	600		P688-005	GT6D5		ST-6-005	TM-25	De-emphasis
C53	150	500		1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Load Cap *
C54	150	500		1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	" " " *
C55	.02	600		P688-02	GT6S2		ST-6-02	TM-12	Audio Coupling
C56	.02	600		P688-02	GT6S2		ST-6-02	TM-12	" "
C57	.02	600		P688-02	GT6S2		ST-6-02	TM-12	" "
C58	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Sync. Coupling
C59	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	" "
C60	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Decoupling
C61	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Sync. Coupling

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: REMBRANDT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C62	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Sync. Coupling
C63	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Vert. Sync. Coupling
C64	470	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Hor. Sync. Coupling
C65	470	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Sync.Inv. Plate Byp.
C66	470	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Hor. Sync. Coupling
C67	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Integrator Net.
C68	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	" "
C69	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	" "
C70	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Vert. Osc. Grid Cap.
C71	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Vert. Osc. Plate Decoup.
C72	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Vert. Discharge
C73	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Vert. Coupling
C74	.001	500		1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	AFC Feedback
C75	.05	600		P688-05	GT6S5		ST-6-05	TM-15	AFC Filter
C76	135								Hor. Osc. Grid Cap.
C77	470	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Hor. Discharge
C78	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Hor. Coupling
C79	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Hor. Output Fil. Bypass
C80	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Hor. Output Screen Bypass
C81	.2	400		P488-22	GT4P2		ST-4-2	6dP38	Fixed Trimmer
C82	500	10000				410-500			HV Filter
C83	.25	400		P488-25	GT4P25		ST-4-25	TC-2	Damper Filter
C84	.03	600		P688-03	GT6S3		ST-6-03	TM-13	" "
C85	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Pic. Tube Cath. Decoup.
C86	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Line Filter
C87	.25	400		P488-25	GT4P25		ST-4-25	TC-2	Bias Filter
C88	.001	600		P688-001	GT6D1		ST-6-001	TM-21	" "
C89	.02	400		P488-02	GT4S2		ST-4-02	TM-12	Output Plate Bypass
C90	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Vert. Deflection Shunt

* When either Item C53 or C54 are replaced, replace both with capacitors of equal value.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REMBRANDT PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½		D13-133	M-60-Z	Volume Control
B	Shaft			A	Not Req.	Attach to R1A Per Instructions
C	Switch			41	SW-A	" " "
R2A	20KΩ	½		D11-120	M-40-S	Horiz. Hold Control
B	Shaft			A	Not Req.	Attach to R2A Per Instructions
R3A	1 Meg.	½		D11-137	M-61-S	Vert. Hold Control
B	Shaft			A	Not Req.	Attach to R3A Per Instructions
R4A	100KΩ	½		D11-128	M-49-S	Brightness Control
B	Shaft			A	Not Req.	Attach to R4A Per Instructions
C	Switch			41	SW-A	" " " "
R5A	500KΩ	½		D11-133	M-58-S	Contrast Control
B	Shaft			A	Not Req.	Attach to R5A Per Instructions
R6A	100KΩ	½		D11-128	AM-49-S	AFC Control
B	Shaft			E #	KSS-3 #	Attach to R6A Per Instructions
R7A	10KΩ	½		D11-116	AM-27-S	Vert. Linearity Control
B	Shaft			E #	KSS-3 #	Attach to R7A Per Instructions
R8A	2 Meg.	½			AM-83-S	Vert. Height Control
B	Shaft				KSS-3 #	Attach to R8A Per Instructions
R9A	5000Ω	½		D11-114	AM-19-S	Horiz. Drive Control
B	Shaft			E #	KSS-3	Attach to R9A Per Instructions
R10	20Ω	2		W-20x10	43-20 CT	Vert. Centering Control Tapped @ 10Ω
R11	20Ω	2		W-20	43-20	Horiz. Centering Control
R12	1500Ω	4				Focus Control
R13A	500Ω	½		D11-103	AM-5-S	Width Control See Note
B	Shaft			E #	KSS-3 #	Attach to R13A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REMBRANDT PART No.	IRC PART No.	IDENTIFICATION CODES (ALL RESISTORS ARE ± 20% UNLESS OTHERWISE STATED.)	
R14	200Ω	½			RF Cathode	5%
R15	10KΩ	1			RF Plate	10%
R16	12KΩ	½			RF Plate Coil Shunt	10%
R17	12KΩ	½			Mixer Grid Coil Shunt	10%
R18	1 Meg.	½			Mixer Grid	10%
R19	100KΩ	½			Bias Network	10%
R20	330KΩ	½			Mixer Screen	10%
R21	12KΩ	½			Osc. Grid	10%
R22	10KΩ	1			Osc. Plate	10%
R23	100KΩ	½			Mixer Decoupling	10%
R24	350Ω	10		AB-3500	Voltage Dropping	
R25	100KΩ	½		BTS-100K	Bias Network	
R26	56KΩ	½		BTS-56K	1st IF Screen	
R27	2000Ω	½		BTS-2200	1st IF Decoupling	
R28	100KΩ	½		BTS-100K	Bias Network	
R29	56KΩ	½		BTS-56K	2nd Video IF Screen	
R30	2000Ω	½		BTS-2200	2nd Video IF Decoupling	
R31	100KΩ	½		BTS-100K	Bias Network	
R32	56KΩ	½		BTS-56K	3rd Video IF Screen	
R33	2000Ω	½		BTS-2200	3rd Video IF Decoupling	
R34	20KΩ	½		BTS-22K-5%	DC Restorer Load	5%
R35	510KΩ	½		BTS-470K	" " "	10%
R36	22KΩ	½		BTS-22K	Video Det. Load	
R37	20KΩ	½		BTS-22K	Peaking Coil Shunt	
R38	140Ω	½			Video Amp. Cathode	
R39	47KΩ	2		BT-2-47K	Video Amp. Screen	10%
R40	20KΩ	½		BTS-22K-5%	Peaking Coil Shunt	5%
R41	3500Ω	10		AB-3500	Video Amp. Plate	
R42	20KΩ	½		BTS-22K-5%	Phase Correction	5%
R43	1 Meg.	½		BTS-1 Meg.	Picture Tube Grid	
R44	510KΩ	½			2nd Sound IF Grid	10%
R45	330Ω	1		BTA-330	2nd Sound IF Cathode	10%
R46	56KΩ	½		BTS-56K	2nd Sound IF Screen	10%
R47	2000Ω	½		BTS-2200	2nd Sound IF Decoupling	
R48	330Ω	1		BTA-330	3rd Sound IF Cathode	10%
R49	56KΩ	½		BTS-56K	3rd Sound IF Screen	10%
R50	2000Ω	½		BTS-2200	3rd Sound IF Decoupling	
R51	22KΩ	1		BTA-22K	Ratio Det. Load	
R52	22KΩ	1		BTA-22K	" "	
R53	1 Meg.	½		BTS-1 Meg.	Isolation	
R54	3.3 Meg.	½		BTS-3.3 Meg.	AF Grid	
R55	200KΩ	½		BTA-220K	AF Plate	10%
R56	200KΩ	½		BTA-220K	" "	10%

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REMBRANDT PART No.	IRC PART No.	IDENTIFICATION CODES	
R57	22KΩ	1		BTA-22K	AF Plate Decoupling	
R58	1000Ω	½		BTS-1000	AF Cathode	10%
R59	510KΩ	½		BTS-470K	Output Grid	10%
R60	200Ω	10		AB-200	Output Cathode	
R61	5000Ω	½		BTS-4700	Output Screen	10%
R62	200Ω	10		AB-200	Filter	
R63	100KΩ	½		BTS-100K	Voltage Divider	
R64	3.3 Meg.	½		BTS-3.3 Meg.	Sync. Amp. Grid	
R65	5100Ω	½		BTS-4700-5%	Sync. Amp. Cathode	5%
R66	10KΩ	½		BTS-10K	Sync. Amp. Plate	
R67	3.3 Meg.	½		BTS-3.3 Meg.	Sync. Amp. Grid	
R68	22KΩ	½		BTS-22K-5%	Sync. Amp. Plate	5%
R69	100KΩ	½		BTS-100K	Sync. Amp. Decoupling	
R70	3.3 Meg.	½		BTS-3.3 Meg.	Sync. Sep. Grid	
R71	1000Ω	½		BTS-1000	Sync. Sep. Cathode	10%
R72	22KΩ	2		BT-2-22K	Sync. Sep. Plate	
R73	5100Ω	2		BT-2-4700	" "	
R74	3.3 Meg.	½		BTS-3.3 Meg.	Sync. Sep. Grid	
R75	2000Ω	½		BTS-2000-5%	Sync. Sep. Cathode	
R76	5100Ω	½		BTS-4700	Sync. Sep. Cathode	5%
R77	33KΩ	½		BTS-33K	Integrator	
R78	10KΩ	½		BTS-10K	Integrator	
R79	10KΩ	½		BTS-10K	"	
R80	1 Meg.	½		BTS-1 Meg.	Vert. Osc. Grid	10%
R81	200KΩ	½		BTA-220K	Vert. Osc. Plate	10%
R82	2.2 Meg.	½		BTS-2.2 Meg.	Vert. Discharge Plate	
R83	3500Ω	10		BTS-4700	Vert. Peaking	10%
R84	3.3 Meg.	½		BTS-3.3 Meg.	Vert. Amp. Grid	
R85	1000Ω	1		BTA-1000	Decoupling	
R86	100KΩ	½		BTS-100K	Horiz. AFC Load	
R87	100KΩ	½		BTS-100K	" "	
R88	47KΩ	2		BT-2-47K	Feedback Network	
R89	5100Ω	½		BTS-5100-5%	AFC Coil Shunt	5%
R90	22KΩ	½		BTS-22K	AFC Filter Network	
R91	100KΩ	½		BTS-100K	Voltage Divider	
R92	1 Meg.	½		BTS-1 Meg.	" "	10%
R93	150KΩ	½			Vert. Osc. Grid	5%
R94	400KΩ	½		BTS-330K	Horiz. Discharge Plate	
R95	1000Ω	½		BTS-1000	Decoupling	10%
R96	510KΩ	½		BTS-470K	Horiz. Output Grid	10%
R97	10Ω	10		AB-100	Horiz. Output Cathode	
R98	10KΩ	2		BT-2-10K	Horiz. Output Screen	
R99	3.5Ω	1		BW-1-3.9	HV Filament	
R100	620KΩ	1			HV Filter	
R101	250KΩ	½		BTS-220K	Bias Network	

½ File out split in knurled shaft for screw driver.
Note. Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: REMBRANDT PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ 2.25A	800VCT @ .270 ADC	5VAC @ 3A	6.6VAC @ 10.2A				P-3166 and P-2946*

* Drill new mounting holes.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: REMBRANDT PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	NOTES
T2	8Ω	3.5Ω		A-8120	TS0-2	A-4072	Hor.Block Osc.Trans.
T3	160Ω	1440Ω		A-8121	TS0-1	A-4071	Vert.Block Osc.Trans.
T4	530Ω	SEC.1		A-8117	TF8-1		Hor. Output Trans.
	Tap @ 0Ω	0Ω					
	160Ω	SEC.2 10Ω					
T5	570Ω	6.7Ω		A-8115	TS0-1	A-3035	Vert. Output Trans.
T6A	13Ω			DY-1			Hor. Deflection Yoke
B	60Ω						Vert. Deflection Yoke
T7	300Ω			FC-10 *			Focus Coil

* Fabricate new mounting bracket.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: REMBRANDT PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T8	14002	3.3Ω	110Ω	.6Ω		A-3825	RO-304	A-2504	

SPEAKER

ITEM No.	RATING: FIELD RES.	RATING: V. C. IMP.	REPLACEMENT DATA: REMBRANDT PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	PM	3.3Ω		ST-117 MOD. P8-T	8A31	
	CONE DIA.	V. C. DIA.				
SP2	7 3/8"	3/4"				

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ↵)	REPLACEMENT DATA: REMBRANDT PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
L1	.270A	9Ω	5 Henry		C-2326§		C-3196§	§ Drill new mtg. hole.

REMBRANDT MODELS 721, 1606, 1606-15, 1950

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

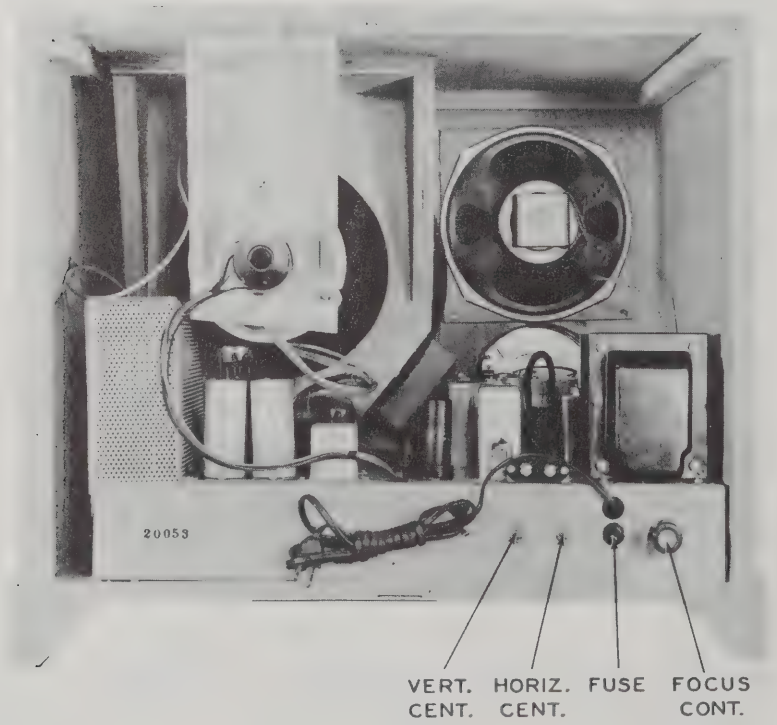
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA REMBRANDT PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L2	Ant. Input	0Ω				Part of Tuner Assembly
L3	RF End Inductor	0Ω				" " " "
L4	RF Plate	0Ω				" " " "
L5	Band Pass	0Ω				" " " "
L6	RF End Inductor	0Ω				" " " "
L7	Mixer Gird	0Ω				" " " "
L8	Osc. Coil	0Ω				" " " "
L9	Osc. Shunt	0Ω				" " " "
L10	RF End Inductor	0Ω				" " " "
L11	1st IF	.2Ω	.2Ω			
L12	2nd IF & Sound Take-Off	.2Ω				
L13	3rd IF	.2Ω	.2Ω			
L14	4th IF	.2Ω	.3Ω			
L15	Peaking	6Ω				Inductance-125 Microhenries
L16	Peaking	13Ω				Inductance-500 Microhenries
L17	Peaking	13Ω				
L18	Peaking	5Ω				Inductance-250 Microhenries
L19	Peaking	6Ω				Inductance-125 Microhenries
L20	Sound IF	.2Ω	.2Ω			
L21	Ratio Det. Transformer	.2Ω	.2Ω			
L22	Horiz. AFC	34Ω				Inductance-25 Millihenries
L23	Horiz. Linearity Control	36Ω				" " "
L24	Horiz. Width	7Ω				
L25	1st Video IF Cath.	6Ω				250 Microhenries

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA REMBRANDT PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	0.15A	Brown			Type #47
M2	Bayonet	6-8V	0.15A	Brown			Type #47

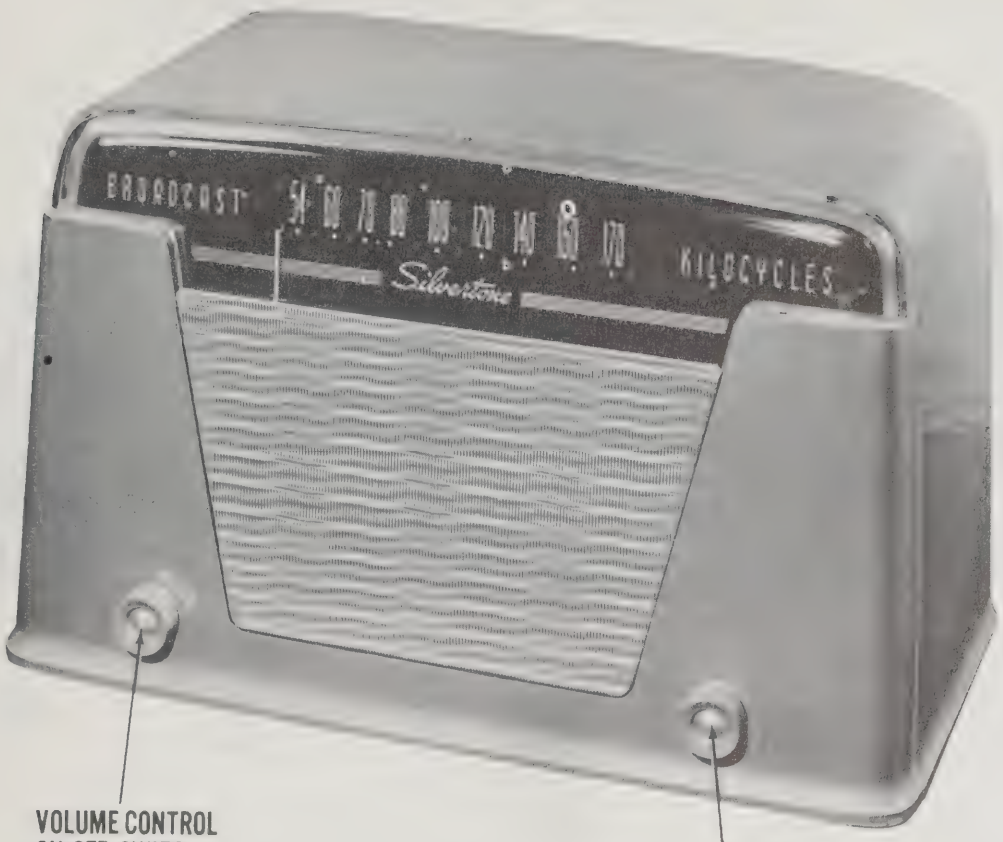
MISCELLANEOUS

ITEM No.	PART NAME	REMBRANDT PART No.	NOTES
M3	Tuner Assembly		
M4	Fuse		5 Amp.



CABINET-REAR VIEW

SILVERTONE MODELS
6200A (Ch. 101.800-3)
8200 (Ch. 101.800-2B)



SILVERTONE MODELS
6200A (Ch. 101.800-3)
8200 (Ch. 101.800-2B)

SILVERTONE MODEL 8200

TRADE NAME	Silvertone, Models 6200A (Ch. 101.800-3), 8200 (Ch. 101.800-2B)
SUPPLIER	Sears, Roebuck and Co., 925 S. Homan St. Chicago, Illinois
TYPE SET	Battery Operated Superheterodyne Receiver
TUBES (FOUR)	Types 1LC6 Converter, 1LC5 IF Amp., 1LD5 DET-AVC-AF, 1LB4 Power Output
POWER SUPPLY RATING	1.5 Volts "A" Supply and 90 Volts "B" Supply in Pack Form 200MA @ 1.5 Volts DC and 9.9MA @ 90 Volts DC
TUNING RANGE—BROADCAST	530-1700KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuner fully closed and set pointer to the last calibration mark to the left of 540KC.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (Grid) of 1LC6 (V1). Low side to chassis.	455KC	Low Frequency end.	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	75MMF	High side thru 75MMF to antenna connection. Low side to chassis.	1725KC	1725KC	"	A5, A6	" " " "
3.	75MMF	"	1500KC	Tune for max. signal	"	A7, A8	Adjust for maximum output. Repeat step 2.

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PARTS LIST AND DESCRIPTIONS

SILVERTONE MODEL 6200

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SILVERTONE PART No.	STANDARD REPLACEMENT		
V1	Converter	1LC6	1LC6	7AK	
V2	IF Amp.	1LC5	1LC5	7A0	
V3	DET-AVC-AF	1LD5	1LD5	6AX	
V4	Power Output	1LB4	1LB4	5AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1	10	150	R57054	PRS150/12	BR1215		M-10-150	UT-121	Decoupling
C2	100	500		1468-0001	5W5T1	GP1K-100	M0.5-31	1FM-31	Voltage Divider
C3	250	500		1468-00025	5W5T25	GP2K-250	M0.5-325	1FM-325	" "
C4	.05	200		P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C5	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Conv. Screen Bypass
C6	50	500		1468-00005	5W5Q5	GP1K-50	M0.5-45	1FM-45	Osc. Grid Cap.
C7	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Osc. Anode Decoupling
C8	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	IF Screen Decoupling
C9	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Audio Coupling
C10	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	AF Screen Bypass
C11	50	500		1468-00005	5W5Q5	GP1K-50	M0.5-45	1FM-45	AF Plate Bypass
C12	.005	400		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C13	250	500		1468-00025	5W5T25	GP2K-250	M0.5-325	1FM-325	Output Plate Bypass

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	500KΩ	½	R57072	D13-133	M-60-Z	Volume control
B	Shaft		Not Req.	A	Not Req.	Attach to R1A Per Instructions
C	Switch		Not Req.	42	SW-A2	" " " " "

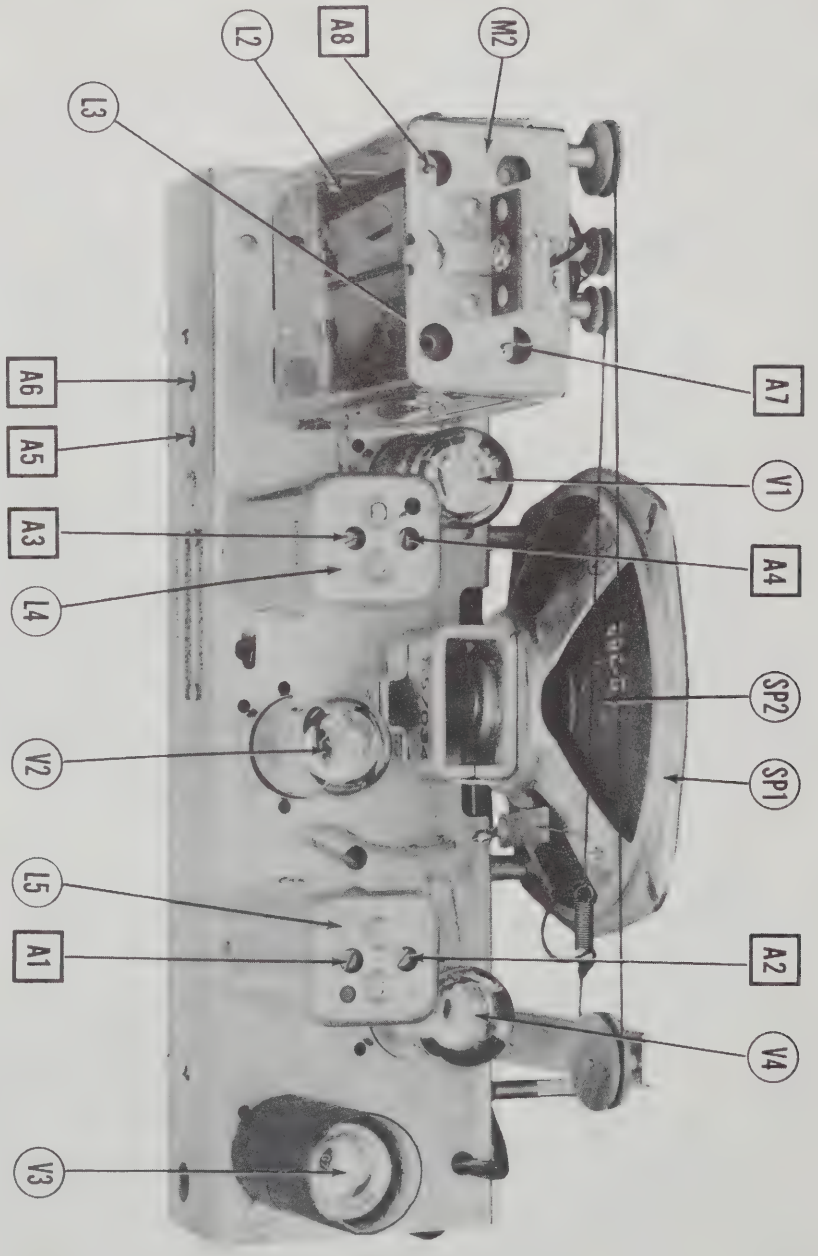
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	
R2	1 Meg.	½		BTS-1 Meg.	AVC Network
R3	3.3 Meg.	½		BTS-3.3 Meg.	" "
R4	180KΩ	½		BTS-180K	Osc. Grid
R5	47KΩ	½		BTS-47K	Conv. Screen
R6	22KΩ	½		BTS-22K	Osc. Anode
R7	220KΩ	½		BTS-220K	IF Plate Decoupling
R8	15 Meg.	½		BTS-15 Meg.	AF Grid
R9	6.8 Meg.	½		BTS-6.8 Meg.	AF Screen
R10	1 Meg.	½		BTS-1 Meg.	AF Plate
R11	2.2 Meg.	½		BTS-2.2 Meg.	Output Grid
R12	820Ω	½		BTS-820	Bias Network
R13	680Ω	½		BTS-680	Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	10KΩ	2.9Ω	580Ω	.35Ω	R62721	A-3879*	RO-302*	A-2932*	* Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
SP1	PM	2.5Ω	R62721		52A1	Alternate Part #R63127
	CONE DIA.	V. C. DIA.				
SP2	5"	9/16"				

R F COILS

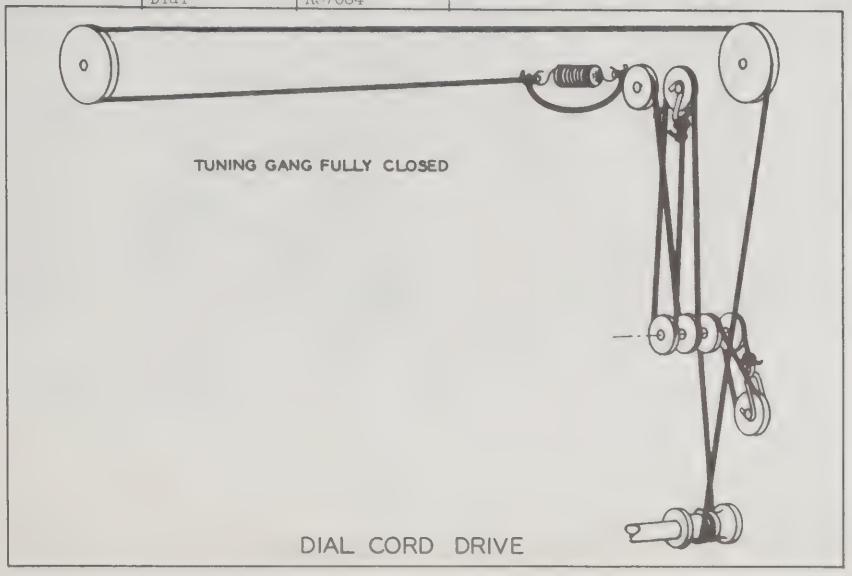
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	RF Ant. Chk.	110Ω		R45255		L2 and L3 are permeability tuned, and are in gang.
L2	Ant. Coil	10Ω		R61675		
L3	Osc. Coil	4Ω	6Ω	R61676		
L4	Input IF	12Ω		R57094	16-57401	† Add 15 Meg resistor in parallel with 250MMF cap. from black lead to ground.
L5	Output IF	12Ω ‡		R57116		‡ Tertiary winding, resistance .3Ω

BATTERIES

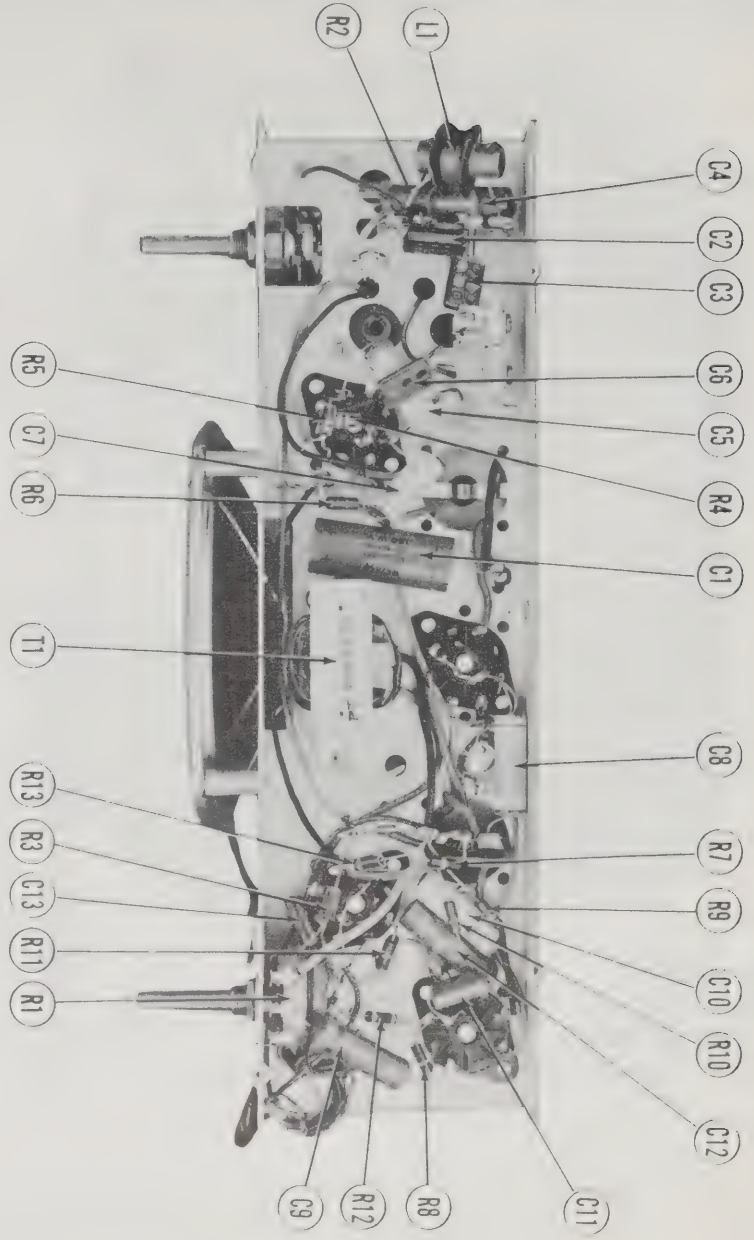
ITEM No.	VOLTAGE	SILVERTONE PART No.	REPLACEMENT DATA: EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	BURGESS "A"	BURGESS "B"	BURGESS "A-B"	INSTALLATION NOTES
M1	1.5V "A" 90V "B"				758			17GD60	

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M2A	Tuner Assy.	R62812	(Ch. 101.800-2B)
B	Tuner Assy.	R57087	(Ch. 101.800-3)
A5	Dual Trimmer	R57096	(Osc. Adj.
A6			(Ant. Adj.
	Dial	R57084	

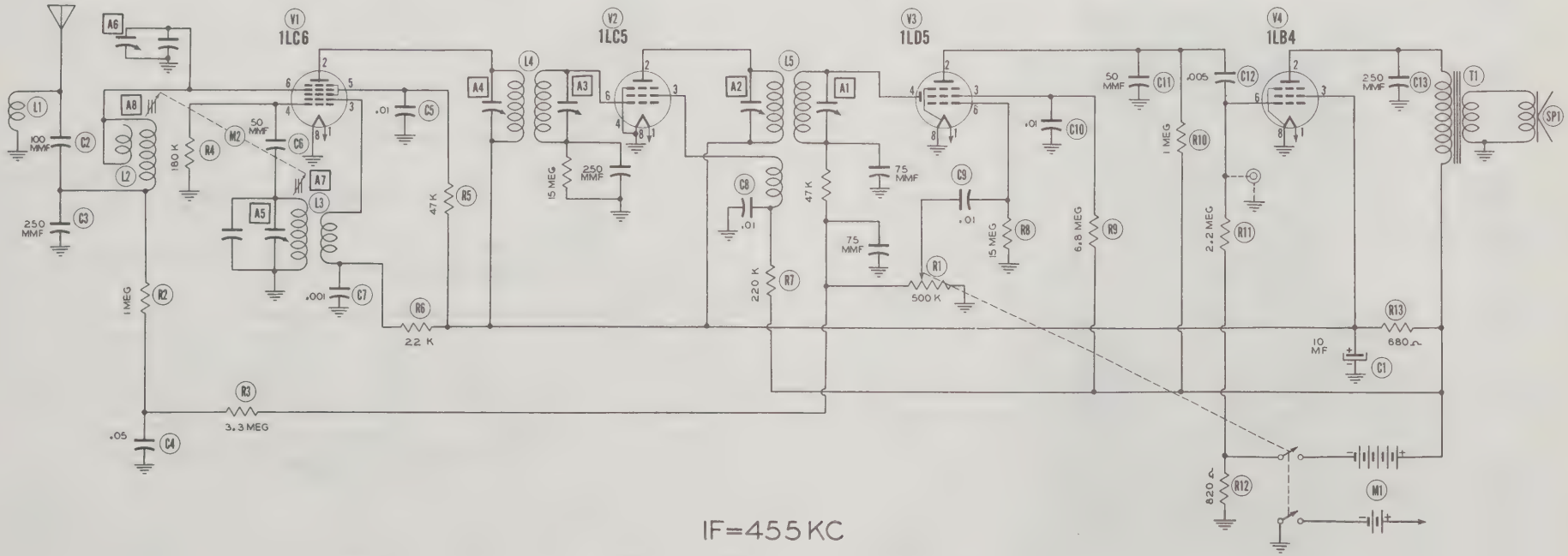


CHASSIS—BOTTOM VIEW



SILVERTONE MODEL 8200

SILVERTONE MODEL 8200



IF=455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	1LC6	1.5VDC	82VDC	47VDC	§7.6VDC	41VDC	0V	0V	0V
V 2	1LC5	1.5VDC	82VDC	36VDC	0V	0V	-.2VDC	0V	0V
V 3	1LD5	1.5VDC	25VDC	10VDC	-.2VDC	0V	0V	0V	0V
V 4	1LB4	1.5VDC	82VDC	82VDC	0V	0V	-1.2VDC	-8.3VDC	0V

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	1LC6	*	†650Ω	†22KΩ	180KΩ	†47KΩ	5 Meg.	Inf.	*
V 2	1LC5	*	†650Ω	†220KΩ	0Ω	*	15 Meg.	Inf.	*
V 3	1LD5	*	† 1 Meg.	†6.8 Meg	600KΩ	Inf.	15 Meg.	Inf.	*
V 4	1LB4	*	†580Ω	†65Ω	0Ω	Inf.	2.2 Meg.	820Ω	*

† Measured from B+ terminal.

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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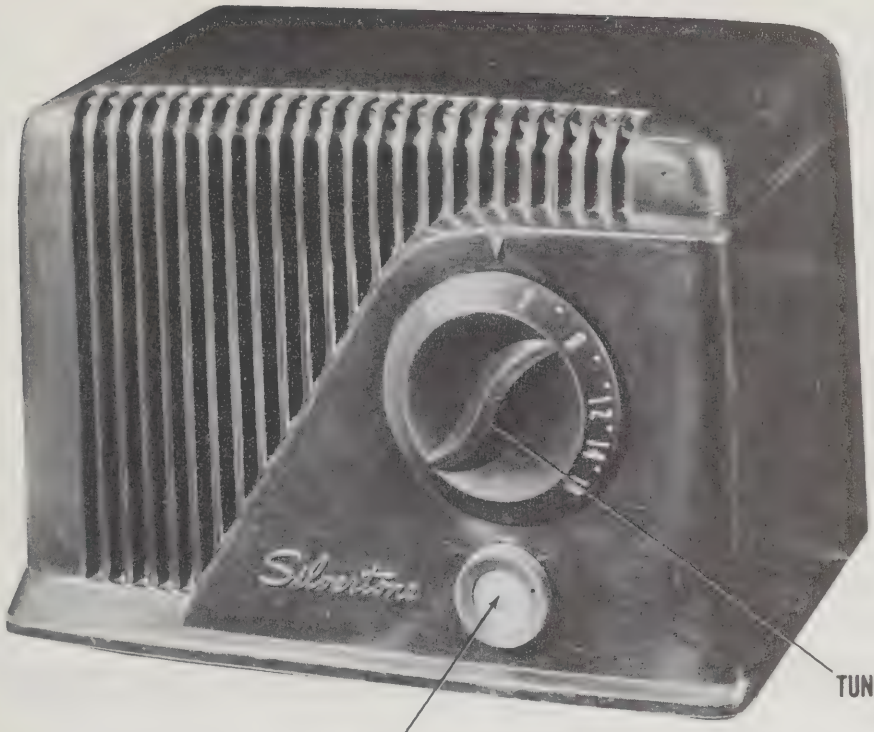
4913-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE MODEL
9000 (Ch. 132.857)



SILVERTONE MODEL
9000 (Ch. 132.857)

SILVERTONE MODEL 9000

TRADE NAME	Silvertone, Model 9000 (Ch. 132.857)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Illinois.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna.
TUBES (FIVE)	Types 12BA6 RF Amp., 12BE6 Converter, 12SQ7GT DET.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC-DC RATING .26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1 MFD cap. in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to Pin 7 (Grid) of 12BE6 (V2). Low side to B-.	455KC	Tuning gang fully open.	Across Voice Coil.	A1, A2	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune for max. signal.	"	A4	Adjust for maximum output.
4.		"	600KC	"	"		If calibration is not at 600KC, bend plates on antenna section of tuning gang. Repeat steps 2 and 3.

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DATE 7/49 4913-13 SET #65 FOLDER 13

PARTS LIST AND DESCRIPTIONS

SILVERTONE
MODEL 9000

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SILVERTONE PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	DET.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	50	150		PRSA50502	EDL5315C		DSB-304	TA-307	Filter Red
B	30	150							Filter Blue
C	20	25							Output Cath. Byp. Green
C2	220			1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	RF Coupling
C3	220			1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	RF Coupling
C4	.05	200		P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C5	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C6	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Diode Filter
C7	.002	600		P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Audio Coupling
C8	250	500		1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AF Plate Bypass
C9	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C10	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Output Plate Bypass
C11	.05	400		P488-05	GT4S5		ST-4-05	72P1	Line Isolation
C12	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Line Filter

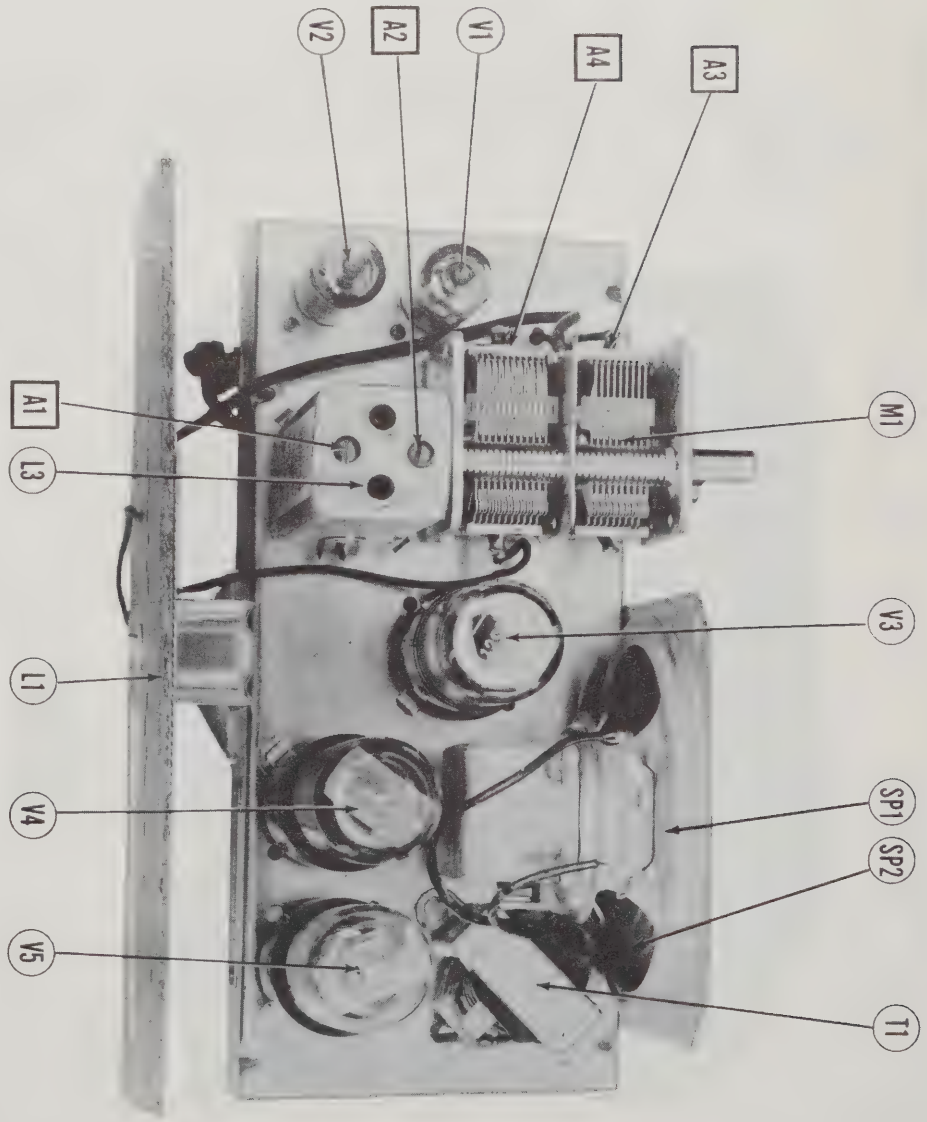
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESIST-ANCE	WATTS	SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	2 Meg	½	N22107	D13-139	M-66-Z	Volume control
B	Shaft			A	Not Req.	Attach to R1A per instructions
C	Switch			41	SW-A	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	
R2	1 Meg	½		BTS-1 Meg	RF Grid
R3	3300Ω	½		BTS-3300Ω	RF Plate
R4	470K	½		BTS-470K	Converter Grid
R5	22K	½		BTS-22K	Osc. Grid
R6	4.7 Meg	½		BTS-4.7 Meg	AVC Network
R7	10 Meg	½		BTS-10 Meg	AF Grid
R8	470K	½		BTS-470K	AF Plate
R9	470K	½		BTS-470K	Output Grid
R10	150Ω	½		BW-½-150	Output Cathode
R11	1200Ω	1		BW-1-1200	Filter
R12	33Ω	½			Surge Limiter
R13	330K	½		BTS-330K	Line Isolation

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2000Ω	3.5Ω	180Ω TAP @ 10Ω	.4Ω	N22103-1	A-3330*	RO-3*	A-3031*	*Drill One New Mounting Hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V.C. IMP.	N22104	ST-113 MOD.P4-X	4A07	
	PM	3.5Ω				
	CONE DIA.	V.C. DIA.				
SP2	3-7/8"	9/16"				

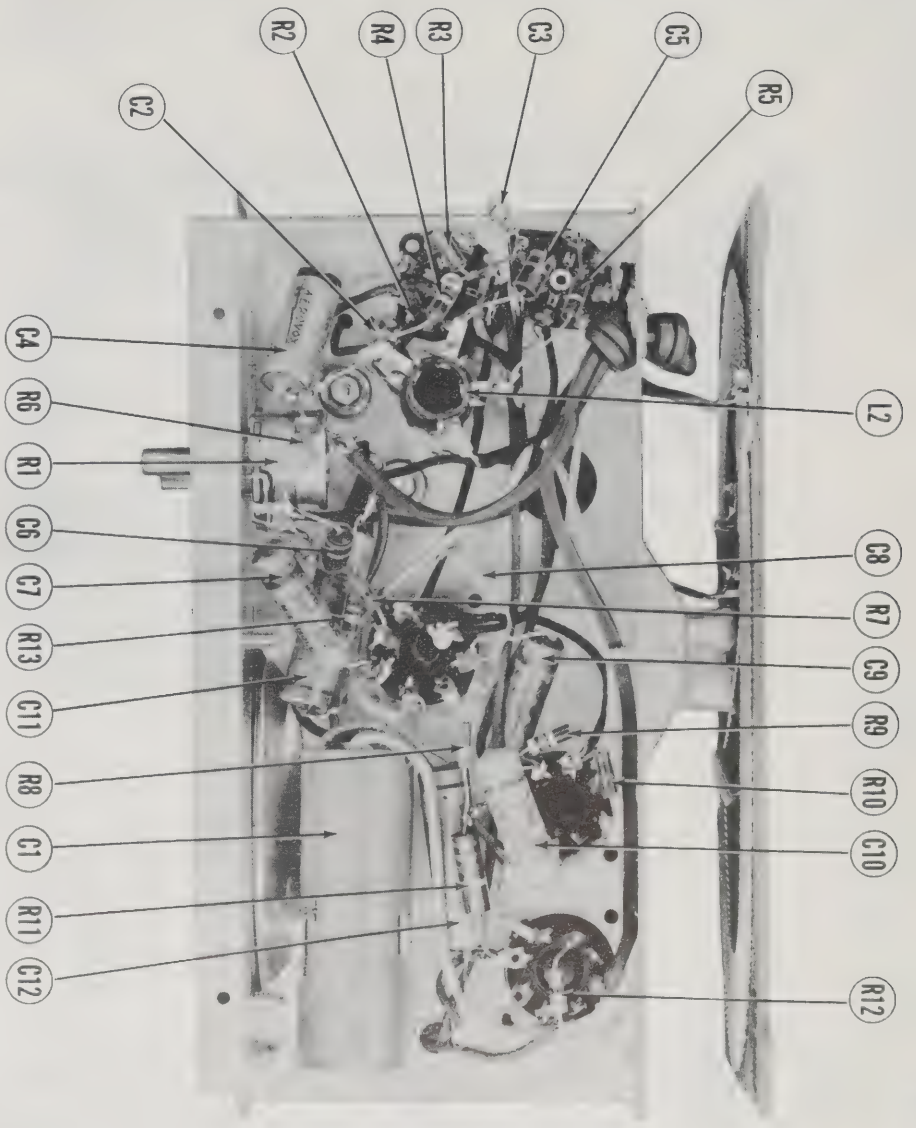
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
L1	Loop Ant.	1.2Ω	0Ω	N22100		
L2	Osc. Coil	7Ω	.8Ω	N22101-1		
L3	IF Trans.	16Ω	16Ω	N22102-1	16-6658	

MISCELLANEOUS

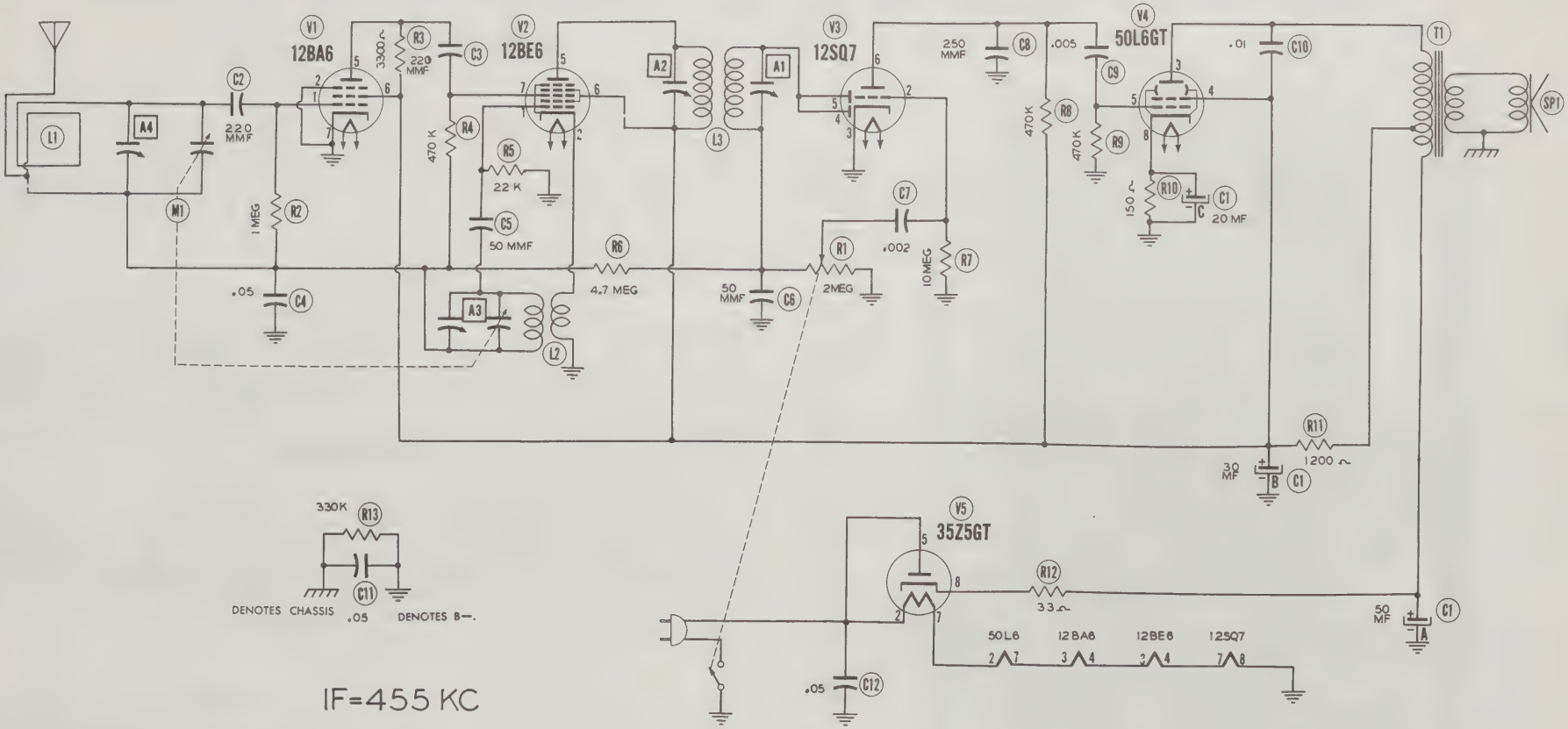
ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M1	2 Gang Var. Cap.	N22105	(81-428MMF, 75-414MMF)
	Cabinet	N22084	
	Knob	N22085	Tuning
	Knob	N22086	Volume

CHASSIS—BOTTOM VIEW



SILVERTONE MODEL 9000

SILVERTONE MODEL 9000



IF=455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BA6	-.9VDC	0V	41VAC	26VAC	60VDC	95VDC	0V	
V 2	12BE6	§-9VDC	0V	26VAC	13VAC	95VDC	95VDC	-.2VDC	
V 3	12SQ7GT	0V	-.7VDC	0V	-.7VDC	-.7VDC	55VDC	13VAC	0V
V 4	50L6GT	0V	87VAC	115VDC	95VDC	0V	0V	41VAC	6.6VDC
V 5	35Z5GT	0V	117VAC	115VAC	123VDC	117VAC	123VDC	87VAC	125VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BA6	8 Meg.	0Ω	36Ω	24Ω	†5KΩ	†1000Ω	0Ω	
V 2	12BE6	20KΩ	0Ω	24Ω	12Ω	†1000Ω	†1000Ω	8 Meg.	
V 3	12SQ7GT	330KΩ	10 Meg.	0Ω	2 Meg.	2 Meg.	†470KΩ	12Ω	0Ω
V 4	50L6GT	Inf.	86Ω	†190Ω	†1.2KΩ	470KΩ	0Ω	36Ω	150Ω
V 5	35Z5GT	Inf.	121Ω	112Ω	†30Ω	121Ω	†36Ω	86Ω	60KΩ

† Measured from pin 8 of V5

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4913-13

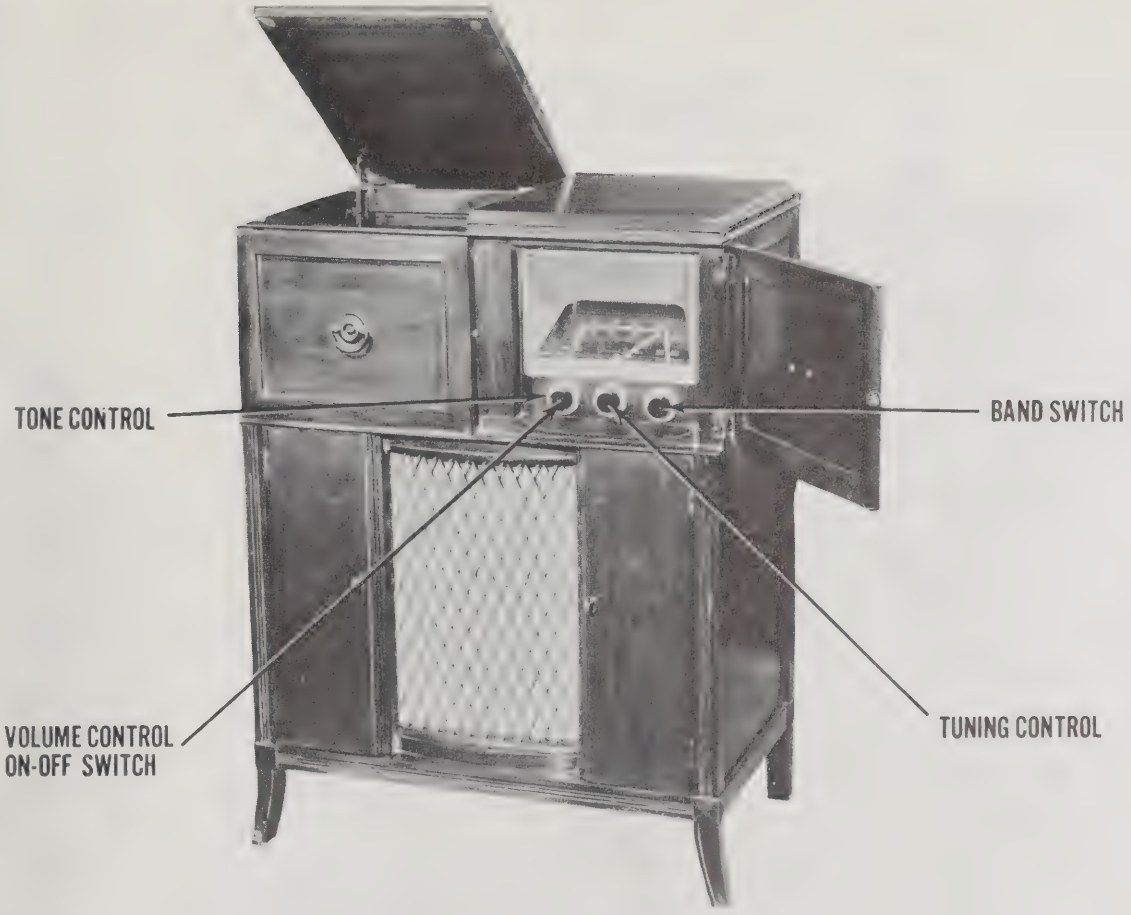
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

STEWART-WARNER MODELS B92CR1, B92CR2, B92CR3, B92CR4, B92CR8, B92CR9, B92CR10

STEWART-WARNER MODELS B92CR1, B92CR2, B92CR3, B92CR4, B92CR8, B92CR9, B92CR10



STEWART-WARNER MODELS B92CR1, B92CR2, B92CR3, B92CR4, B92CR8, B92CR9, B92CR10

STEWART-WARNER MODEL B92CR1

TRADE NAME	Stewart-Warner, Models B92CR1, B92CR2, B92CR3, B92CR4, B92CR8, B92CR9, B92CR10 (Codes 9043-A-B-C-D-K-L-M)		
MANUFACTURER	Stewart-Warner Corp., 1826 Diversey Pkwy. Chicago, Illinois		
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna.		
TUBES(NINE)	Types 12AT7 Converter, 6BA6 1st IF Amp., 6BA6 2nd IF Amp., 6BA6 FM 3rd IF Amp., 6AL5 Ratio Detector, 6SQ7 AM DET-AVC, 6SQ7 AF Amp., 6V6GT Power Output, 5Y3GT Rectifier.		
POWER SUPPLY	110-120 Volts AC	RATING	.82 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC	FREQ. MOD.	88-108MC

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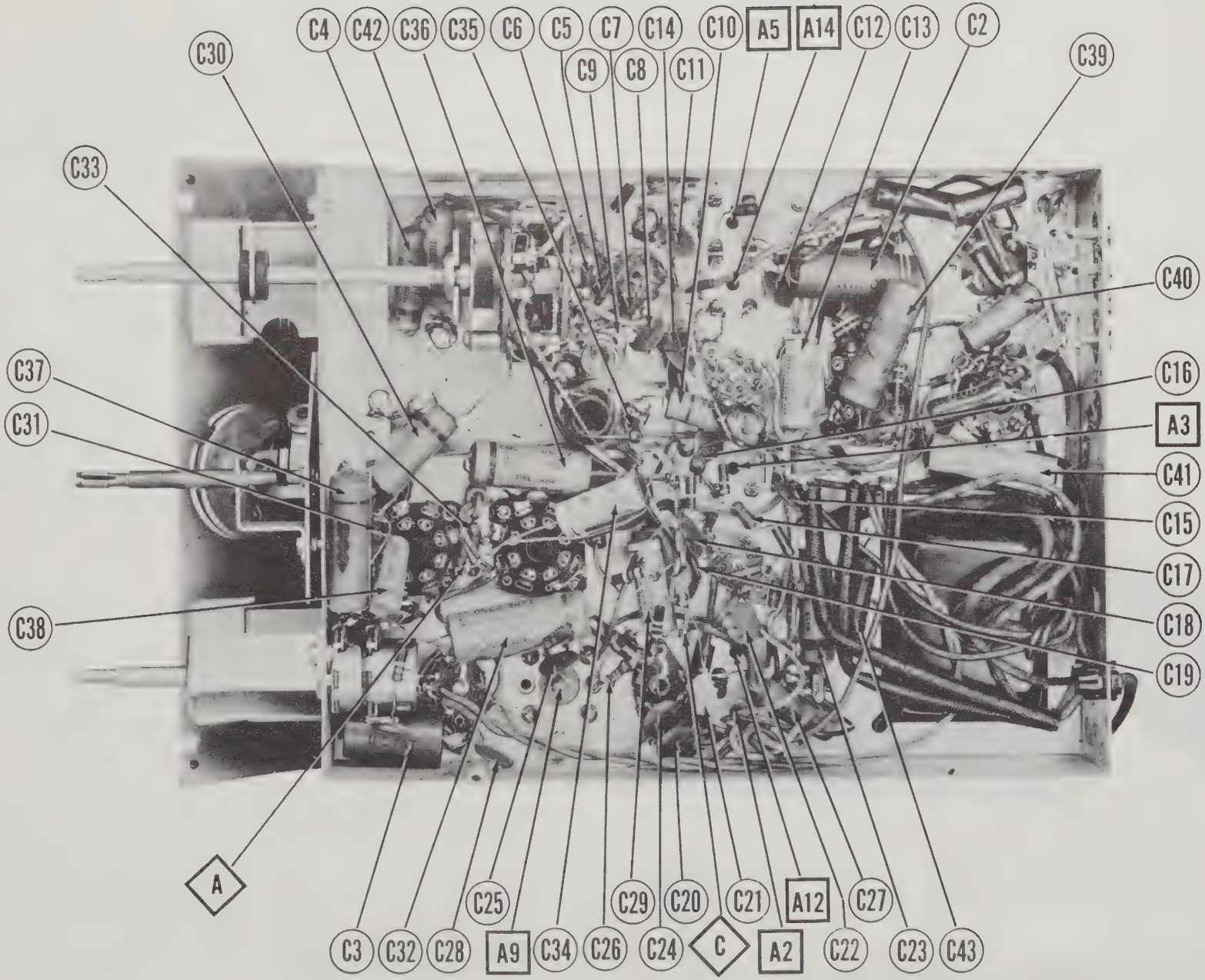
DATE 7/49 4913-14 SET #65 FOLDER #14


C4
C42
C36
C35
C6
C5
C7
C14
C10
A5
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C12
C13
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C8
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C24
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A2
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C23
C43

R37
R38
R40
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R6
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L7
R35
R3
R22
M5
R34
R31
R36
R1
R30
R29
R26
R32
R27
R28
R23
R25
R24
R20
L14
R33
R19
R16
R15
R14
R17
R18
R13

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12AT7	12AT7		
V2	1st IF Amp.	6BA6	6BA6	7BK	
V3	2nd IF Amp.	6BA6	6BA6	7BK	
V4	3rd FM IF Amp.	6BA6	6BA6	7BK	
V5	Ratio Det.-AVC	6AL5	6AL5	6BT	
V6	AM Det.-AVC	6SQ7	6SQ7	8Q	
V7	AF Amp.	6SQ7	6SQ7	8Q	
V8	Power Output	6V6GT	6V6GT	7AC	
V9	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	505908	AF862J4A	UP		DY-406	EL-424	●Filter
B	30	450			43145C				■Filter
C	10	450							▲Filter
D	20	25							Output Cath. Bypass
C2	4	450	504719	PRS450/4	BR445		M-4-450	UT-4	Decoupling
C3	5	50	504937	PRS150/4	BR550		M-4-150	TA-550	Stabilizing Cap.
C4	.05	200	502153	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C5	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Conv. Cath. Bypass
C6	1		504983						Osc. Coupling
C7	5		504905	1469-00000	5R5V5	NP0K-5	MOS.5-55	MS-55	Fixed Trimmer ±10%
C8	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Osc. Feedback
C9	39		502182	1469-00004	5R5Q4		MOS.5-44	MS-44	Osc. Grid Cap ±5%
C10	.01	400	502151	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Filament Bypass
C11	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Conv. Plate Decoup.
C12	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AFC Filter
C13	.004	600	502156	P688-004	GT6D4	GP2M-005	ST-6-004	TM-24	1st IF Cath. Bypass
C14	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Screen Bypass
C15	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C16	33		506399			NP0L-33			Fixed Trimmer ±5%
C17	47		504974	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	IF Coupling
C18	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Cath. Bypass
C19	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Screen Bypass
C20	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Decoupling
C21A	150		Note 1	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Filter
C21B	150		Note 1	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Filter
C22	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd IF Grid Filter
C23	.05	200	502153	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C24	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd IF Screen Bypass
C25	5000		505873	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd IF Decoupling
C26	150		505026	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Load Cap
C27	.01	400	502151	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	De-emphasis
C28	5000		505873	1467-005	1D5D5	GP2M-005	MO.5-25	1FM-25	Ratio Det. Fil. Bypass
C29	.02	400	502152	P488-02	GT4S2		ST-4-02	TM-12	Audio Coupling
C30	.05	200	502153	P288-05	GT2S5		ST-4-05	TM-15	Audio Coupling
C31	.002	600	502260	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Audio Coupling
C32	.25	200	512044	P488-25	GT2P25		ST-2-25	TC-2	Tone Compensation
C33	100		502931	1468-0001	5W5T1	GP1K-160	MO.5-31	1FM-31	AF Plate Bypass
C34	.02	400	502152	P488-02	GT4S2		ST-4-02	TM-12	Audio Coupling
C35	47		504974	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Bypass
C36	.1	400	502410	P488-1	GT4P1		ST-4-1	TM-1	AF Plate Decoup.
C37	.1	200	502032	P288-1	GT2P1		ST-2-1	TM-1	Tone Compensation
C38	.001	600	504904	P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Tone Compensation Note 2
C39	.1	200	512032	P288-1	GT2P1		ST-2-1	TM-1	Tone Compensation
C40	.002	600	502260	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Output Plate Bypass
C41	.05	400	502157	P488-05	GT4S5		ST-4-05	TM-15	RF Bypass
C42	.01	400	502151	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Phono Tone Compensation
C43	.01	400	512255	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Line Filter

Note 1 Items C21A, C21B, And R19 Are Combined Into One Unit Obtainable Under Mfgr's Part No. 505946.
Note 2 Some Models Use .01MFD In This Application.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	V.C. IMP.		ST-116		
SP1	PM	3.5Ω	505342	MOD.P8-11	8A31	
				ST-116		
SP2	PM	3.5Ω	506328	MOD.P8-11	8A31	
	CONE DIA.	V.C. DIA.				
SP3	7-1/4"	3/4"				
SP4	7-1/4"	3/4"				

R F COILS

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	AM Loop Ant	0Ω				
L2	FM Ant.	0Ω				
L3	FM Ant.Coil	0Ω		505919		
L4	AM Loop	.1Ω	2ΩCT	505929		
	Loading Coil					
L5	Fil. Choke	0Ω		505075		
L6	FM Osc.Coil	0Ω		505918		
L7	AM Osc.Coil	0Ω	5.5Ω	505927	14-1060	
L8	FM 1st IF	.5Ω	.5Ω	506080		
L9	AM 1st IF	8.5Ω	9Ω	505906	16-6678	
L10A	FM 2nd IF	1Ω		505907		
B	AM 2nd IF	8Ω				
L11	FM 3rd IF	1.5Ω	.5Ω	505905		
L12	AM 3rd IF	8.5Ω	9Ω	505906	16-6678	
L13	Ratio Det.	1Ω	.1Ω	505904		
L14	Fil. Choke	0Ω		505075		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	0.25A	Blue	110629		Type #44
M2	Bayonet	6-8V	0.25A	Blue	110629		Type #44
M3	Bayonet	6-8V	0.25A	Blue	110629		Type #44

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: STEWART-WARNER PART No.	REPLACEMENT DATA: ASTATIC PART No.	REMARKS
M4	505100	LT-2M	

MISCELLANEOUS

ITEM No.	PART NAME	STEWART-WARNER PART No.	NOTES
M5	Switch	505922	Band-Phono
M6	Tuning Gang	505916	(37-537MMF, 29-207MMF)
	Dial Scale	505939	Brown Background
	Dial Scale	506310	Black Background
	Dial Pointer	505686	

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	STEWART-WARNER PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	2 Meg	½	505911			Volume control and switch tapped @ 500KΩ
B	2 Meg	½				Tone control. (Dual Concentric)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	STEWART-WARNER PART No.	IRC PART No.	
R2	2200Ω	½	510043	BTS-2200	Converter Cathode
R3	1 Meg	½	510091	BTS-1 Meg	AVC Network
R4	10KΩ	½	510055	BTS-10K	Osc. Grid
R5	2200Ω	½	510043	BTS-2200	Osc. Plate
R6	10Ω	½	510001		Parasitic Suppressor
R7	1000Ω	½	510037	BTS-1000	Converter Decoupling
R8	1 Meg	½	510091	BTS-1 Meg	AVC Network
R9	68Ω	½	510016		1st IF Cathode
R10	22KΩ	½	510061	BTS-22K	1st IF Screen Decoupling
R11	3300Ω	½	510046	BTS-3300	FM IF Coil Shunt
R12	8200	½	510053	BTS-8200	AM IF Coil Shunt
R13	1 Meg	½	510091	BTS-1 Meg	2nd IF Grid
R14	68Ω	½	510016		2nd IF Cathode
R15	22KΩ	½	510161	BTS-22K	2nd IF Screen Bleeder
R16	10KΩ	½	510155	BTS-10K	2nd IF Screen Dropping
R17	1000Ω	½	510037	BTS-1000	2nd IF Decoupling
R18	1 Meg	½	510091	BTS-1 Meg	3rd FM IF Grid
R19	47KΩ	½	Note 1	BTS-47K	Diode Filter
R20	470KΩ	½	510085	BTS-470K	Diode Load
R21	2200Ω	2	510343	BT-2-2200	Filter
R22	2.2 Meg	½	510093	BTS-2.2 Meg	AVC Network
R23	22KΩ	1	510261	BTA-22K	3rd FM IF Screen Decoupling
R24	1000Ω	½	510137	BTS-1000	3rd FM IF Decoupling
R25	3300Ω	½	510046	BTS-3300	Balancing
R26	22KΩ	½	510061	BTS-22K	Ratio Det. Diode Load
R27	2.2 Meg	½	510093	BTS-2.2 Meg	AVC Network
R28	470KΩ	½	510085	BTS-470K	AVC Network
R29	68KΩ	½	510070	BTS-68K	Tone Compensation
R30	1000Ω	½	510037	BTS-1000	Series Vol. Control
R31	15 Meg	½	510098	BTS-15 Meg	AF Grid
R32	2.2 Meg	½	510093	BTS-2.2 Meg	AF Plate
R33	220KΩ	½	510079	BTS-220K	AF Plate Decoupling
R34	220KΩ	½	510079	BTS-220K	Series Phono
R35	68KΩ	½	510070	BTS-68K	Phono Shunt
R36	47KΩ	½	510067	BTS-47K	Feedback
R37	2200Ω	½	510043	BTS-2200	Feedback
R38	470KΩ	½	510085	BTS-470K	Output Grid
R39	330Ω	½	510128	BTA-330	Output Cathode
R40	47Ω	½	510013		Parasitic Suppressor
R41	600Ω	5	510709	AB-600	Filter
R42	600Ω	5	510709	AB-600	Filter

Note 1 C21A, C21B And R19 Are Combined Into One Unit Obtainable Under Mfgr's Pt#505946.

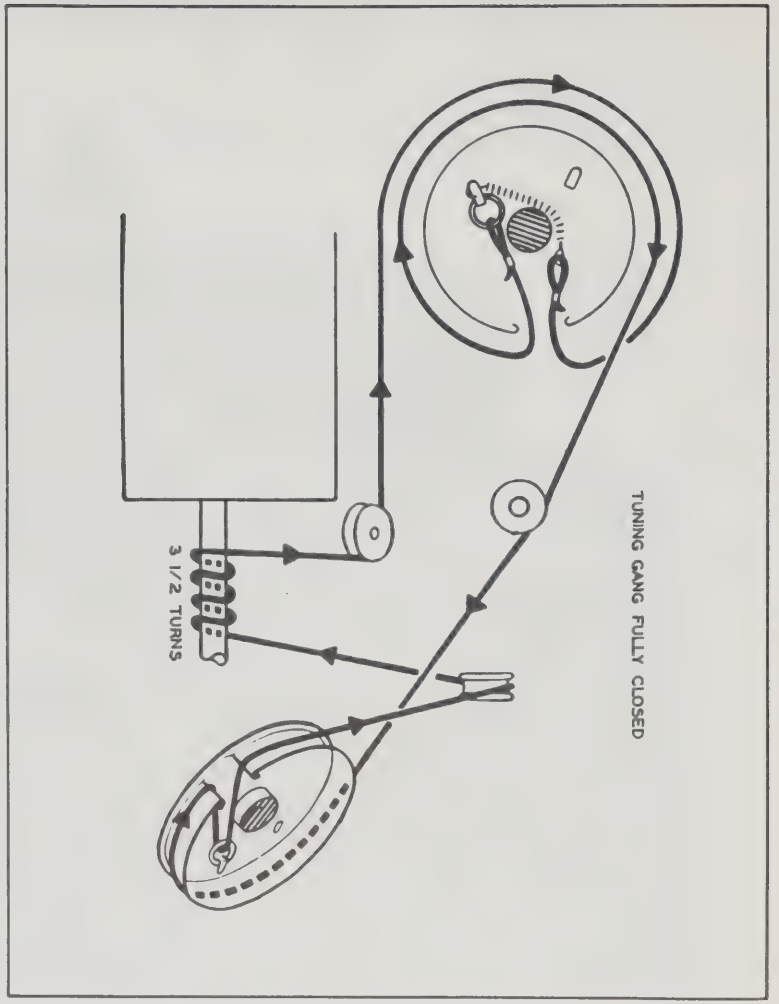
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	STEWART-WARNER PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .82A	660VAC CT.093A DC	5VAC @ 2A	6.6VAC @ 3.4A	505909	P-6012*	PH-90*	P-2952*

*Drill New Mounting Holes.

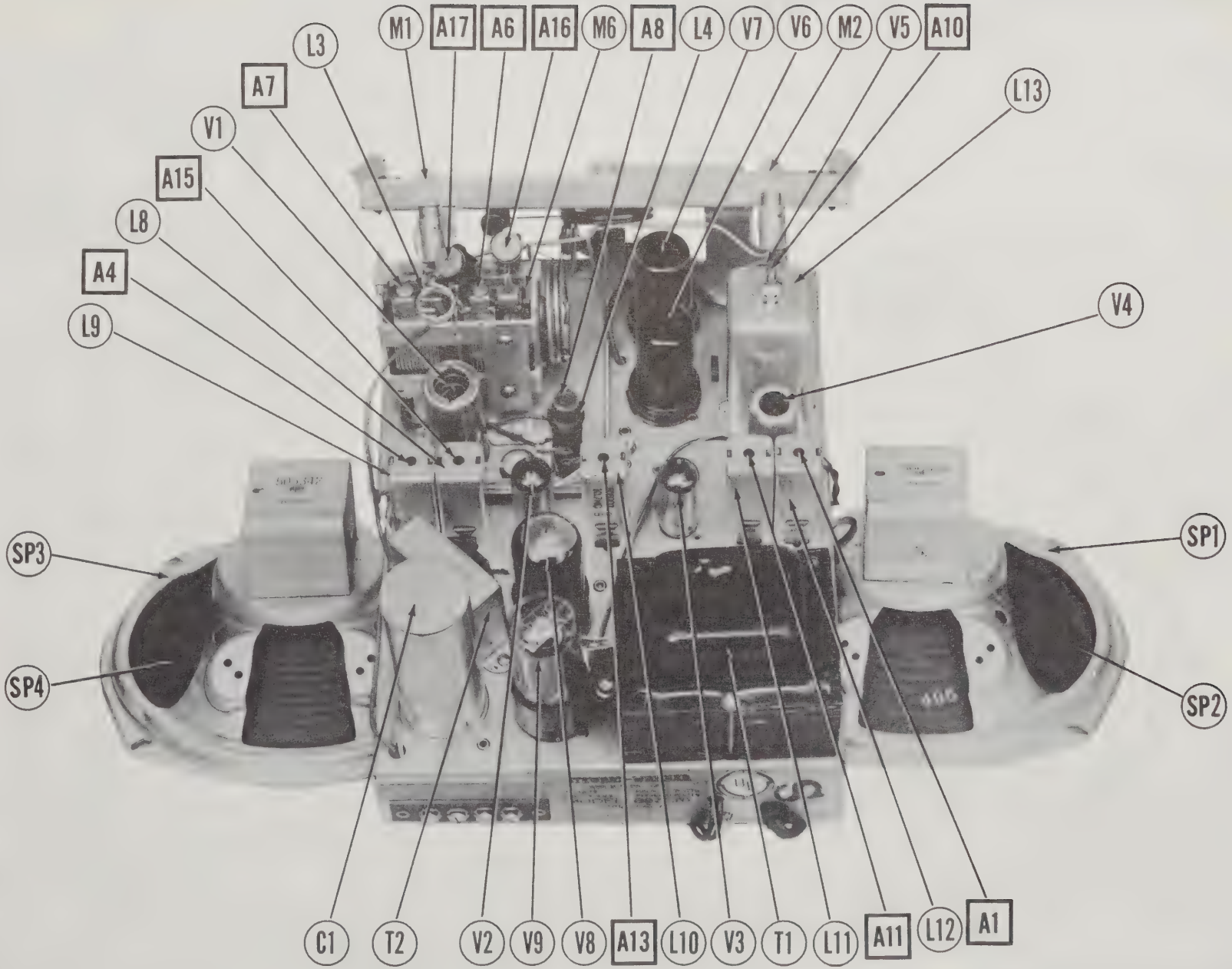
TRANSFORMER (OUTPUT)

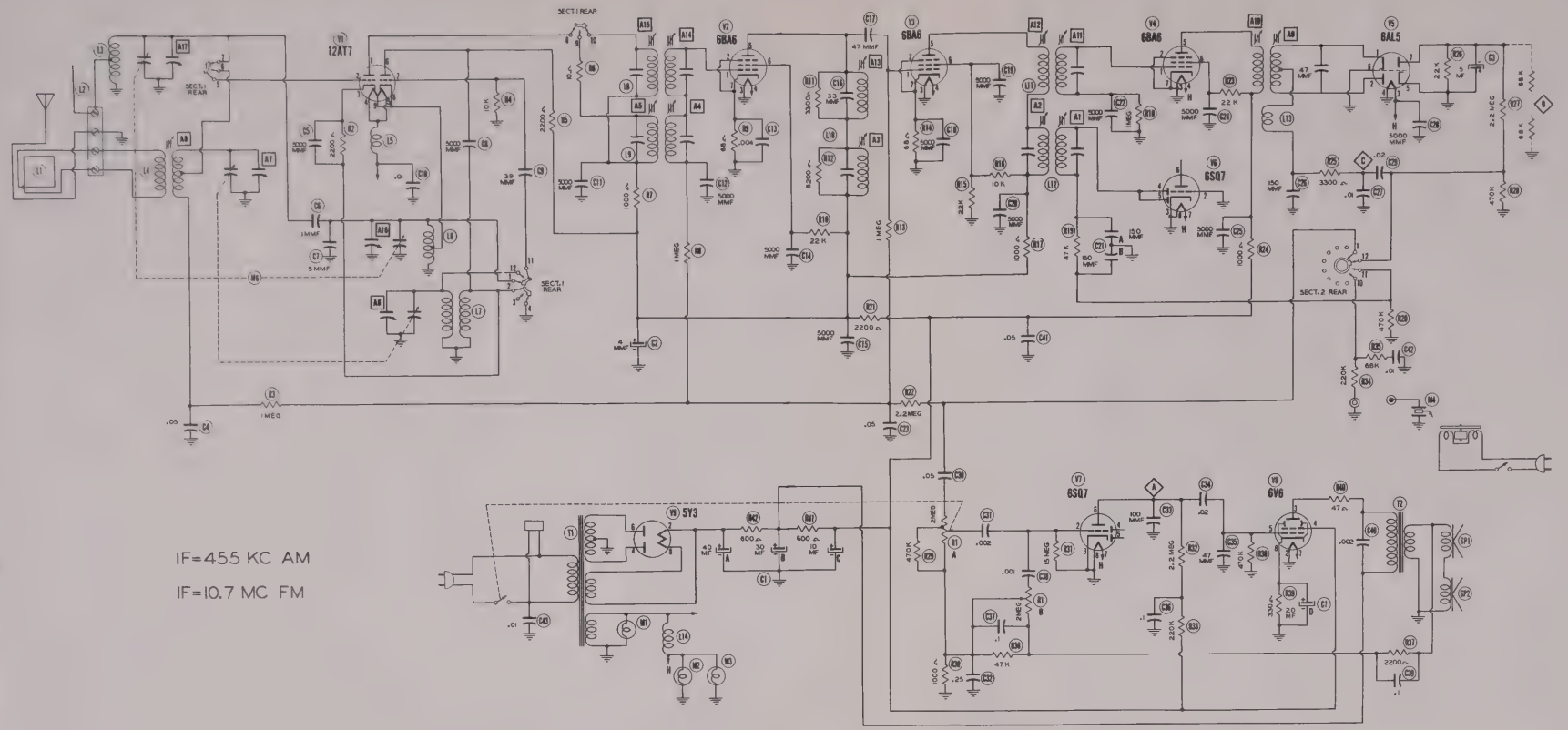
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		STEWART-WARNER PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5KΩ	1.9Ω	450Ω	.5Ω	505912	A-3849	RO-303	A-2902	



DATE 7/49 4913-14 SET #65 FOLDER #14

STEWART-WARNER MODELS
B92CR1, B92CR2, B92CR3, B92CR4,
B92CR8, B92CR9, B92CR10


M1
A17
A6
A16
M6
A8
L4
V7
V6
M2
V5
A10
L3
A7
V1
A15
L8
A4
L9
L13
V4
SP3
SP1
SP4
SP2
C1
T2
V2
V9
V8
A13
L10
V3
T1
L11
A11
L12
A1



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7	175VDC	-.1VDC	3.2VDC	6.3VAC	6.3VAC	160VDC	-4.8VDC	0V	0V
V 2	6BA6	-.1VDC	.8VDC	0V	6.3VAC	175VDC	80VDC	.8VDC		
V 3	6BA6	-.2VDC	.8VDC	0V	6.3VAC	160VDC	95VDC	.8VDC		
‡ V 4	6BA6	-.8VDC	0V	0V	6.3VAC	240VDC	100VDC	0V		
‡ V 5	6AL5	-1.6VDC	-.8VDC	6.3VAC	0V	0V	0V	-.8VDC		
V 6	6SQ7	0V	0V	0V	-.6VDC	-.6VDC	-.9VDC	6.3VAC	0V	
V 7	6SQ7	0V	0V	0V	-.3VDC	-.3VDC	50VDC	6.3VAC	0V	
V 8	6V6GT	0V	0V	260VDC	240VDC	0V	0V	6.3VAC	14VDC	
V 9	5Y3GT	260VDC	330VDC	280VDC	320VAC	RM	320VAC	0V	330VDC	

‡TAKEN WITH VACUUM TUBE VOLTMETER.
VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7	4KΩ	3.5 Meg.	2.8KΩ	.3Ω	.3Ω	5.5KΩ	12KΩ	0Ω	0Ω
V 2	6BA6	3.5 Meg.	6KΩ	0Ω	.3Ω	3KΩ	4.9KΩ	6KΩ		
V 3	6BA6	3.3 Meg.	6KΩ	0Ω	.3Ω	4KΩ	13KΩ	6KΩ		
‡ V 4	6BA6	1.8 Meg.	0Ω	0Ω	.3Ω	2.5KΩ	27KΩ	0Ω		
‡ V 5	6AL5	Inf.	Inf.	.3Ω	0Ω	0Ω	Inf.	22KΩ		
V 6	6SQ7	0Ω	0Ω	0Ω	520KΩ	520KΩ	Inf.	.2Ω	0Ω	
V 7	6SQ7	.3Ω	1.5 Meg.	0Ω	Inf.	Inf.	2.2Meg.	.2Ω	0Ω	
V 8	6V6GT	0Ω	0Ω	1000Ω	1200Ω	470Ω	2.2KΩ	.2Ω	330Ω	
V 9	5Y3GT	45KΩ	45KΩ	45KΩ	13KΩ	Inf.	12Ω	Inf.	47KΩ	

* Measured from pin 2 of V9

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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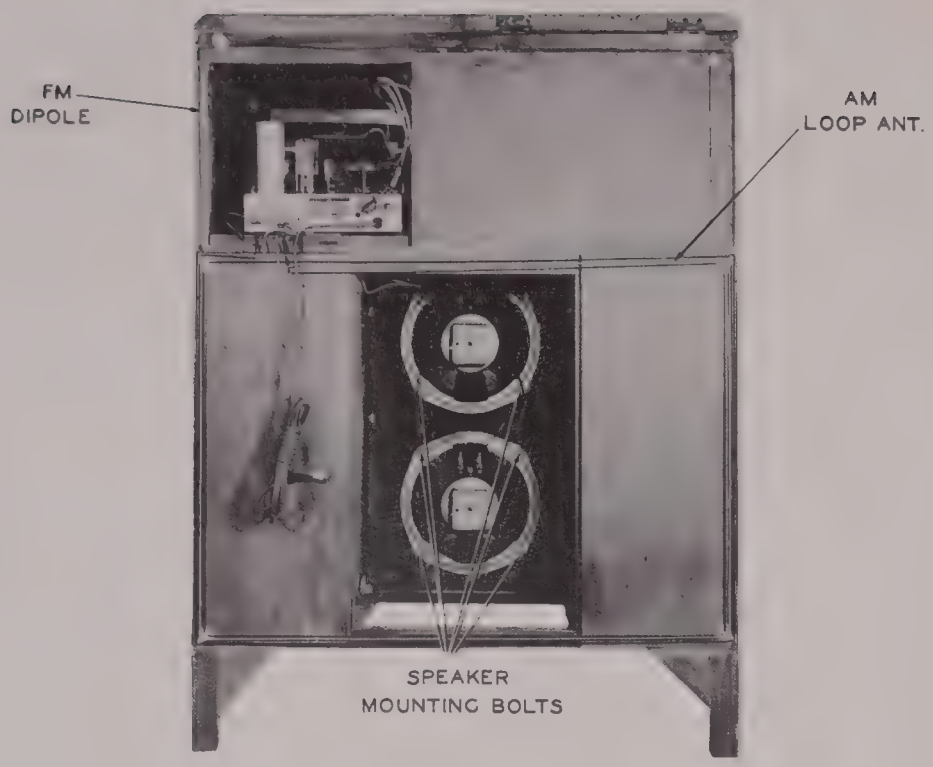


DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Disconnect phono motor plug and remove phono pick-up plug from front of chassis.
3. Remove FM and AM antenna leads from terminal strip at rear of chassis.
4. Remove speaker leads from both speakers.
5. Remove four 1/4" hex head screws holding chassis. Remove chassis.
6. Remove four 11/32" hex nuts holding each speaker. Remove both speakers.

AM ALIGNMENT

If alignment of both FM and AM channels is necessary, align the AM channel first.

It is recommended when aligning this receiver to remove the chassis and stand it on edge spaced approximately the same distance from the loop as when installed in cabinet.

To set the dial pointer turn the tuning capacitor fully closed. Hold the tuning shaft steady and position pointer to indicate the last division below "55" at the low frequency end of the dial.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

After alignment has been completed, and chassis has been re-installed in cabinet, arrange the loop leads so they are separated as much as possible without twisting or extending the leads.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to rear AM stator on tuning gang. Low side to chassis.	455KC	AM (Middle)	Point of non-interference	Across voice coil	A1,A2, A3,A4, A5	Adjust for maximum output. Repeat to assure accurate alignment.
2.	1000MMF Mica cap.	High side to ext. ant. clip. Low side to chassis.	1500KC	"	1500KC	"	A6	Adjust for maximum output.
3.	"	"	"	"	Tune for maximum output.	"	A7	" " " "
4.	"	"	600KC	"	600KC	"	A8	Adjust for maximum output. Repeat steps 3 and 4 until one no longer detunes the other.

FM ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

If alignment of both FM and AM channels is necessary, align the AM channel first.

Dress the FM circuit leads as short and straight as possible. Do not move leads and components in receiver any more than necessary.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	.01MFD	High side to pin 2 (Grid) 12AT7 (V1). Low side to chassis.	10.7MC (600KC Sweep)	FM (fully clockwise)	Point of non-interference	Vert. Amp thru .1MFD cap to Point (A) Low side to chassis.	A9	Pre-set A10,A11,A12,A13, A14 & A15 for approx. maximum sound before adjusting A9. Then adjust A9 for pattern similar to Fig 1 or Fig 2. (Depending on Horiz. Sweep Voltage). Correct setting is when Point B is centered both vertically and horizontally with curve between A and C linear as possible.
6.	.01MFD	"	"	"	"	"	A10, A11, A12, A13, A14, A15	Adjust for maximum amplitude and steepness between A & C as per Fig 1 or 2 slightly retouch A9 & A10 for correct crossover and symmetry of pattern.
7.	Two 120Ω carbon res.	Insert resistor in each generator lead and connect across FM antenna terminals.	108MC (600KC Sweep)	"	108MC	"	A16	Adjust maximum symmetry and correct crossover at center of pattern.
8.	"	"	"	"	"	"	A17	Adjust for maximum amplitude of pattern. Retouch A14 and A15 with signal generator set as in step 8, for maximum amplitude of pattern.

CALIBRATION CHECK

Check calibration at 88 and 98MC. If calibration error exceeds 300KC it is advisable to make the following adjustments. (1) If pointer falls above 88MC calibration point, slightly spread the windings of the FM Oscillator coil1 Repeat adjustments of A16 and A17 at 108MC. If the 108MC signal does not fall at the correct point, adjust the spacing of the plates of the FM Oscillator section on the tuning gang capacitor. (2) If pointer falls below 88MC calibration mark, it will be necessary to squeeze the windings of the FM oscillator coils and then repeat the adjustments of A16 and A17 at 108MC. If the 108MC note does not fall at the correct point, adjust the spacing of the plates on the tuning gang.

FM ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Before starting step 6 of this type FM alignment connect two 68KΩ(±1%) matched resistors in series, from pin 7 of 6AL5 tube (V5) to chassis. Connect the common lead of the VTVM to the junction of these two resistor (Point (B)) and the DC probe to Point (C) on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	.01MFD	High side to pin 2 (Grid) 12AT7 (V1). Low side to chassis.	10.7MC	FM	Point of non-interference	DC Probe to Pin 7 of 6AL5. Common to chassis.	A10, A11, A12, A13, A14, A15	Adjust for maximum deflection.
6.	.01MFD	"	"	"	"	DC Probe to Point (C) Common lead to Point (B)	A9	Adjust for zero reading. A positive & negative reading is obtained on either side of the correct setting. Recheck A9 and A10 to assure correct alignment of discriminator transformer. Remove two 68KΩ resistors
7.	Two 120Ω carbon res.	Insert resistor in each generator lead and connect across FM ant. terminals.	108MC	"	108MC	DC Probe to Pin 7 of 6AL5. Common to chassis.	A16	Adjust for maximum deflection.
8.	"	"	108MC	"	108MC	"	A17	Adjust for maximum deflection. Retouch A14 & A15 with generator set as in step 8 for maximum deflection.

Check calibration by same method outlined in FM Alignment using FM signal generator & Oscilloscope

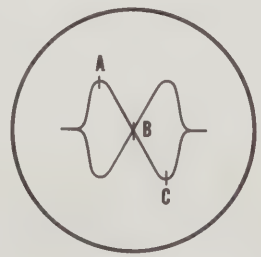


FIG. 1

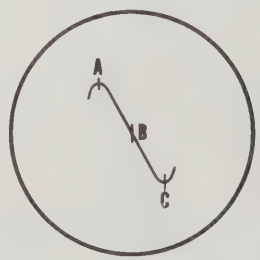
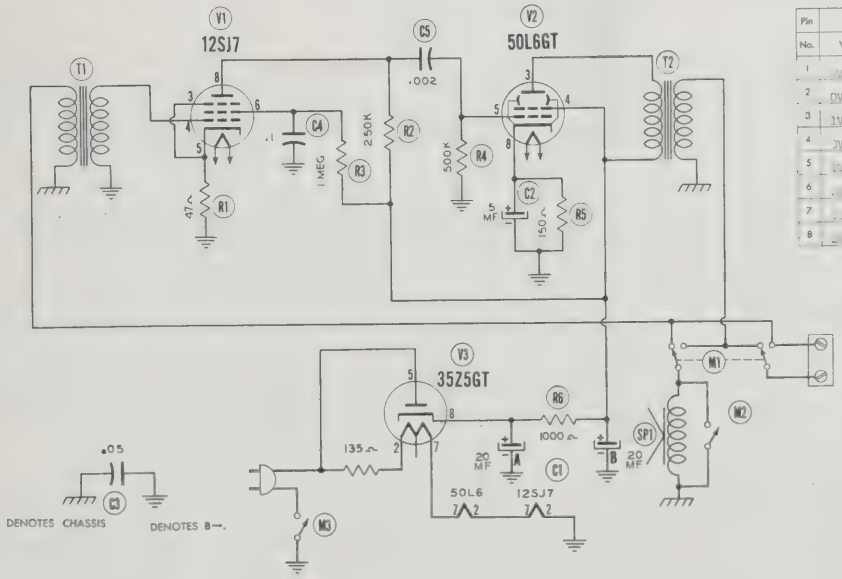


FIG. 2

TRUETONE
MODEL D-2606

TRUETONE MODEL D2606

TRADE NAME	Truetone, Model D2606
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC-DC Operated Inter-Communication System.
TUBES (THREE)	Types 12SJ7GT AF Amp., 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC RATING .22 Amp. @ 117 Volts AC



Pin No.	12SJ7GT Volt.	12SJ7GT Res.	50L6GT Volt.	50L6GT Res.
1	[illegible]	[illegible]	[illegible]	[illegible]
2	0V	0Ω	11VAC	12Ω
3	1VDC	4KΩ	90VDC	•1000Ω
4	0V	3KΩ	92VDC	•1000Ω
5	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	•1.8Ω	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]

Pin No.	35Z5GT Volt.	35Z5GT Res.
1	0V	0Ω
2	95VAC	100Ω
3	85VAC	92Ω
4	0V	0Ω
5	117VAC	24Ω
6	0V	27Ω
7	55VAC	62Ω
8	132VDC	75KΩ

†Measured from pin [illegible] of V2

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4913-15

1. - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. - Socket connections are shown as bottom views.
3. - Measured values are from socket pin to common negative.
4. - Line voltage maintained at 117 volts for voltage readings.
5. - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. - No signal applied for voltage measurements.

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DATE 7/49 4913-15 SET #65 FOLDER #15

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	AF Amp.	12SJ7GT	12SJ7GT	8N	
V2	Audio Output	50L6GT	50L6GT	7AC	
V3	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	150	1-W-101	PRSA150/20	EDL2215		DSB-2x20	TVA-20	Filter - Red
B	20	150		-20			-150		" "
C2	5	25	1-W-102	PRSA25/10	BR102A		M-10-25	TA_5	Output Cathode Bypass
C3	.05	400	1-W-105	P488-05	GT4S5		ST-4-05	TM-15	Line Isolation
C4	.1	200	1-W-104	P288-1	GT2P1		ST-2-1	TM-1	AF Amp. Screen Bypass
C5	.002	600	1-W-103	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Audio Coupling

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	IDENTIFICATION CODES
R1	4000Ω	1/2	2-W-112	BTS-3900	AF Cathode
R2	250KΩ	1/2	2-W-110	BTS-250K	AF Plate
R3	1 Meg.	1/2	2-W-111	BTS-1 Meg.	AF Screen
R4	500KΩ	1/2	2-W-109	BTS-470K	Output Grid
R5	150Ω	1/2	2-W-108	BW-1/2-150	Output Cathode
R6	100Ω	5	2-W-106	AB-1000	Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: TURNS RATIO PRI. TO SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T1	1 to 80	.5Ω	2900Ω	4-W-117				

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T2	2000Ω	6Ω	185Ω	.9Ω	4-W-118				

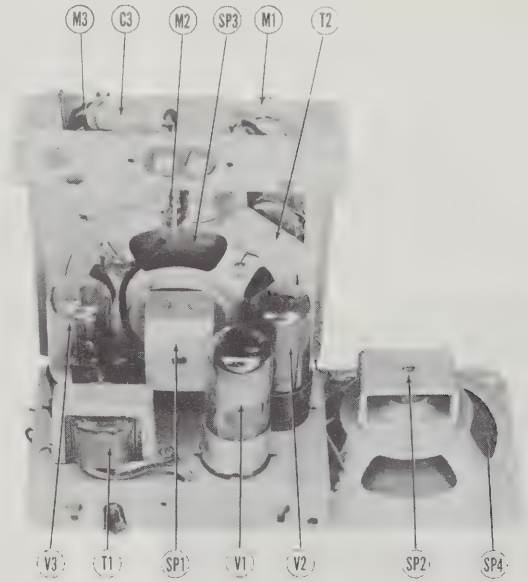
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: TRUETONE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V.C.IMP.		ST-113		‡ Replace output transformer to match 3.2Ω voice coil.
SP1	PM	6Ω	4-W-116	MOD.P4-X‡	4A07 ‡	
SP2	PM	6Ω	4-W-116	ST-113 MOD.P4-X‡	4A07 ‡	
	CONE DIA.	V.C.DIA.				
SP3	3 7/8"	9/16"				
SP4	3 7/8"	9/16"				

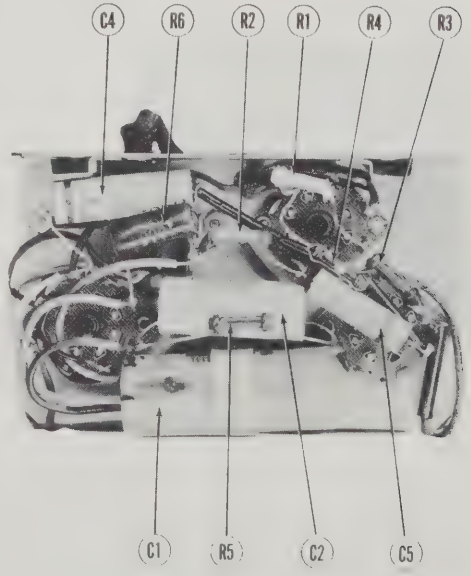
MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M1	Switch	3-W-113	Talk-Listen
M2	Switch	3-W-114	Active-Listen
M3	Switch	3-W-115	On-Off
	Line Cord	4-W-124	Includes 135Ω Resister
	Knob	4-W-121	With Pointer
	Knob	4-W-122	Pushbutton
	Cabinet	4-W-127	Master
	Cabinet	4-W-128	Remote
	Remote Station	4-W-130	Complete Unit

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



TRUETONE
MODEL D2910

TRUETONE
MODEL D2910

TRUETONE MODEL D2910

TRADE NAME	Truetone, Model D2910
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna.
TUBES (FIVE)	Types 12SA7 Converter, 12SK7 IF Amp., 12SQ7 DET-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC RATING .25 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 4 (Grid) of 6SK7 (V2). Low side to chassis.	455KC	Tuning gang fully open.	Across voice coil.	A1, A2	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	.1MFD	High side to rear stator of tuning gang. Low side to chassis.	455KC	"	"	A3, A4	"
3.	.1MFD	"	1620KC	"	"	A5	Adjust for maximum output.
4.		Loop	1400KC	Tune for max. signal. Set pointer to 1400KC calibration mark.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TRUETONE MODEL D2910

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7	12SA7	8R	
V2	IF Amp.	12SK7	12SK7	8N	
V3	DET.-AVC-AF	12SQ7	12SQ7	8Q	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	45X363	AF10100	UP5515		DY-2x50	EL-25	■Filter
B	50	150					-150		▲Filter
C2	.05	200	B66503	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C3	220	500	47X468	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Diode RF Filter
C4	.005	200	B66502	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C5	220	500	47X468	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	AF Plate Bypass
C6	.005	200	B66502	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C7	.005	400	D66205	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Output Plate Bypass
C8	.02	400	D66503	P488-02	GT4S2		ST-4-02	TM-12	Line Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½	36X373	D13-133	AM-60-Z	Volume control
B	Shaft			E	KSS-3	Attach to R1A per instructions
C	Switch			41	SW-A	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	B84223	BTS-22K	Osc. Cathode
R3	2.2 Meg	½	B85225	BTS-2.2 Meg	AVC Network
R4	10 Meg	½	B85106	BTS-10 Meg	AF Grid
R5	470KΩ	½	B84474	BTS-470K	AF Plate
R6	470KΩ	½	B84474	BTS-470K	Output Grid
R7	150Ω	½	B83151	BW-½-150	Output Cathode
R8	1500Ω	1	C85152	BW-1-1500	Filter
R9	27Ω	½	B83270		Rect. Ballast

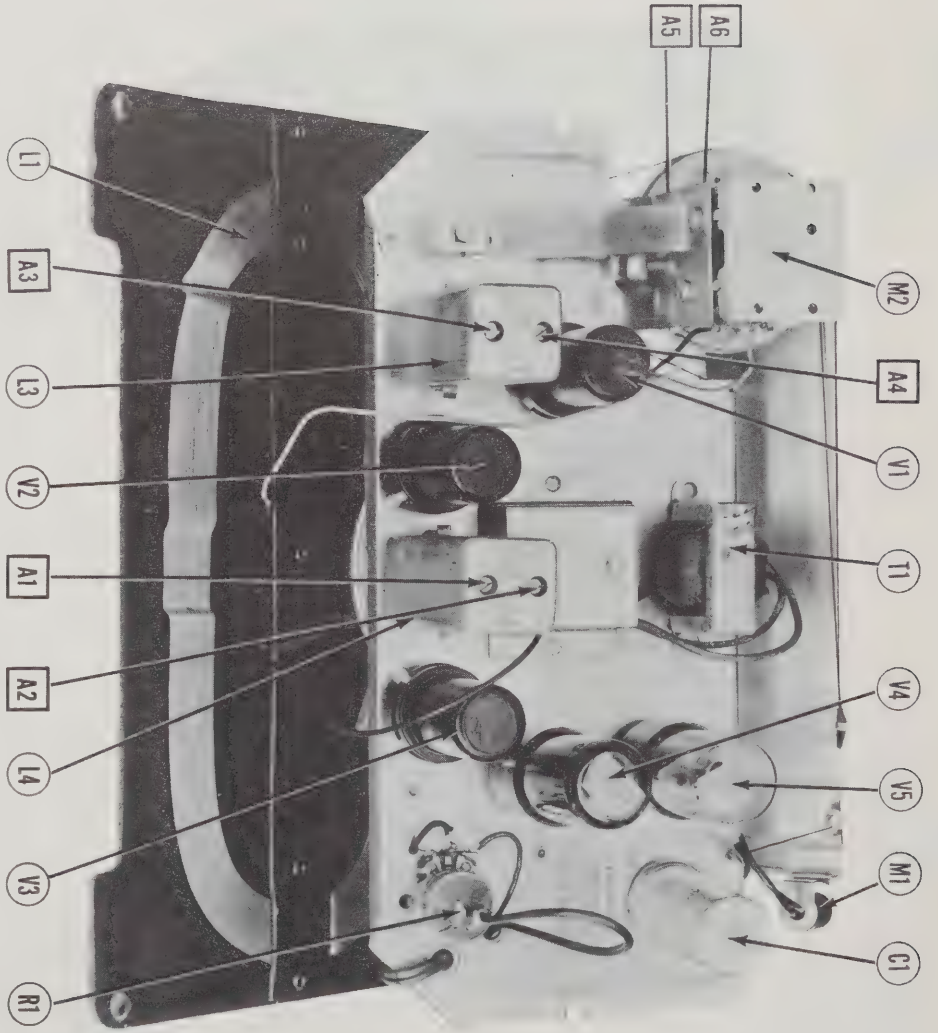
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T1	2000Ω	3.5Ω	265Ω	.5Ω	X-507	A-3879	RO-2	A-2928	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: TRUETONE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	FIELD	V.C. IMP.	12A479	ST-105* MOD.P5-X	5A07*	*Drill and Tap Magnet Frame
	PM	3.5Ω				
	CONE DIA.	V.C. DIA.				
SP2	4-1/2"	9/16				

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

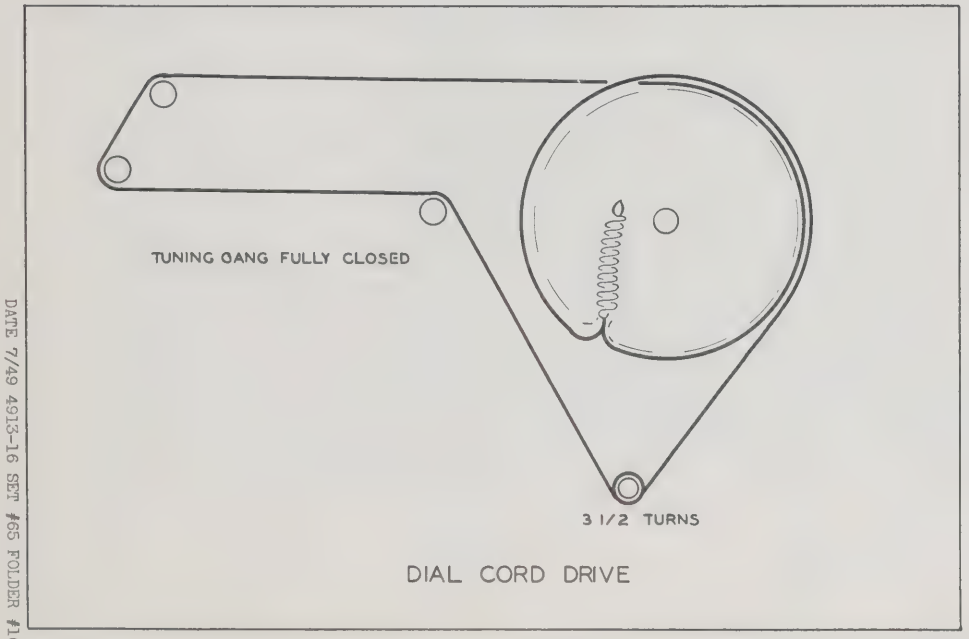
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA TRUETONE PART No.	REPLACEMENT DATA MEISSNER PART No.	
L1	Loop Ant.	1.2Ω		9A1943		
L2	Osc. Coil	6Ω		9A1914	14-1060†	†Add 50MMF from high side of tuning cap to Osc. Grid.
L3	Input IF	24Ω	24Ω	X-1295	16-6658	
L4	Output IF	24Ω	21Ω	X-1296	16-6660	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA TRUETONE PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	.15	Brown	7A103		Type #47

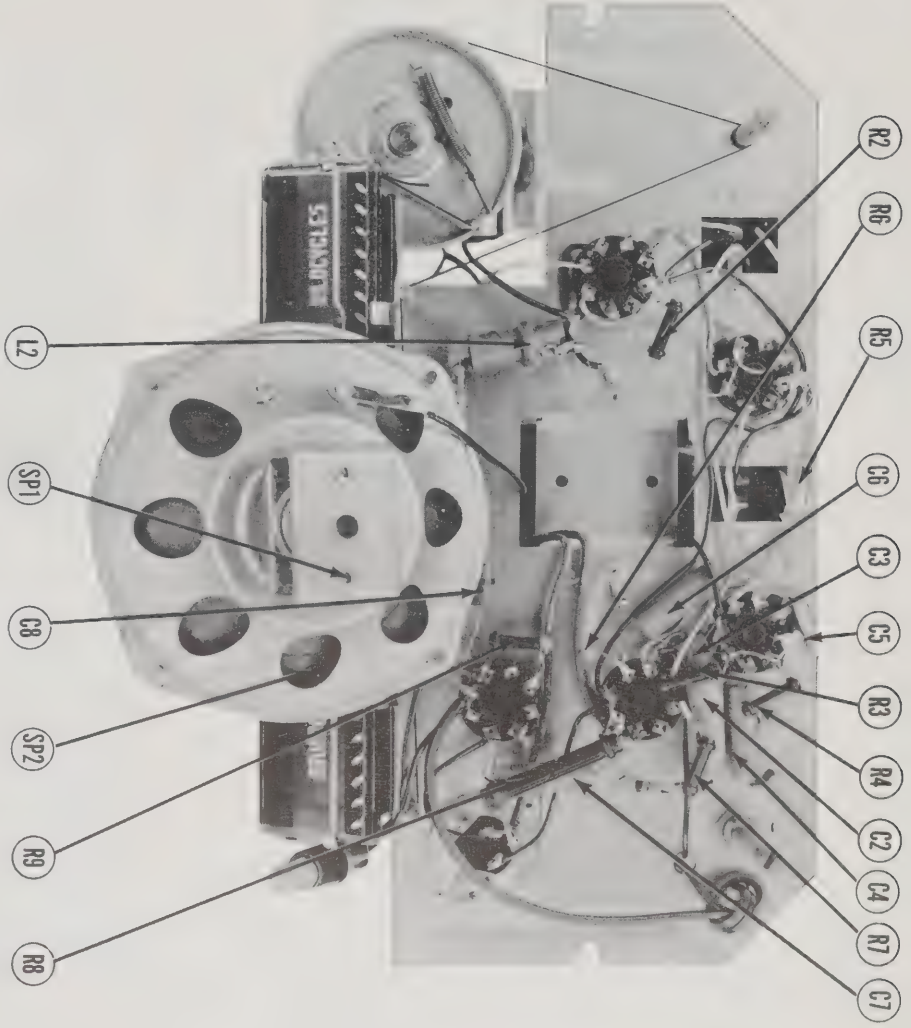
MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M2	2 Gang Var. Cap.	14A199	(34-475MMF, 34-198MMF)
	Dial Glass	58X701	
	Dial Pointer	15X242	
	Knob	10A297	
	Cabinet	55X321	

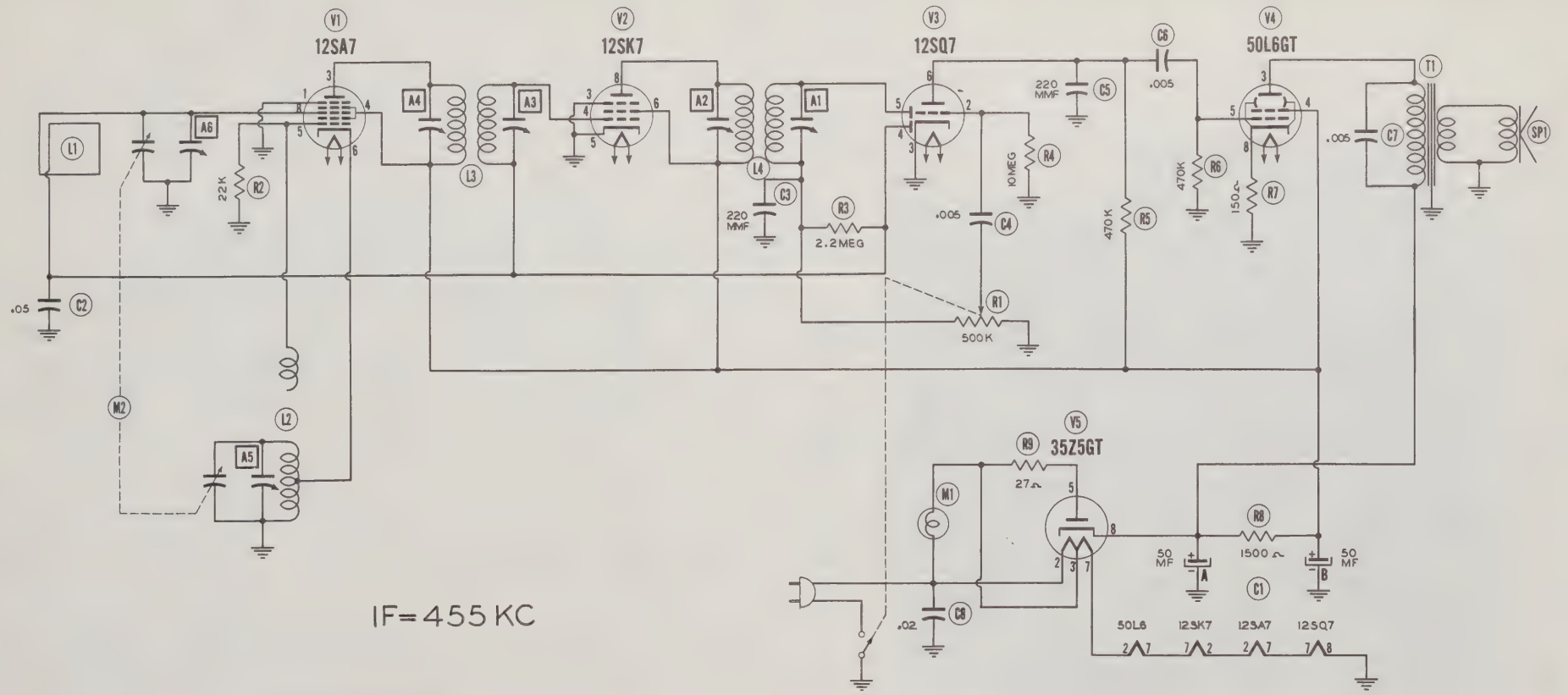


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



TRUETONE MODEL D2910



IF=455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	0V	24VAC	83VDC	83VDC	§-.4VDC	0V	12VAC	-.3VDC
V 2	12SK7	0V	24VAC	0V	-.3VDC	0V	83VDC	36VAC	83VDC
V 3	12SQ7	0V	-.4VDC	0V	-.3VDC	-.2VDC	43VDC	12VAC	0V
V 4	50L6GT	0V	85VAC	115VDC	83VDC	0V	-.3VDC	36VAC	4.9VDC
V 5	35Z5GT	0V	117VAC	113VAC	0V	112VAC	0V	85VAC	120VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	0Ω	24Ω	†1.5KΩ	†1.5KΩ	22KΩ	.8Ω	12Ω	2.7 Meg
V 2	12SK7	0Ω	24Ω	0Ω	2.7 Meg	0Ω	†1.5KΩ	36Ω	†1.5KΩ
V 3	12SQ7	0Ω	10 Meg	0Ω	2.7 Meg	500KΩ	†470KΩ	12Ω	0Ω
V 4	50L6GT	INF	85Ω	†160Ω	†1.5KΩ	470KΩ	470KΩ	36Ω	150Ω
V 5	35Z5GT	INF	113Ω	110Ω	INF	132Ω	INF	85Ω	160KΩ

†Measured From Pin 8 Of V5.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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4913-16

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MODEL H-196AM

MODEL H-207AM

WESTINGHOUSE
MODELS H-196, H-207

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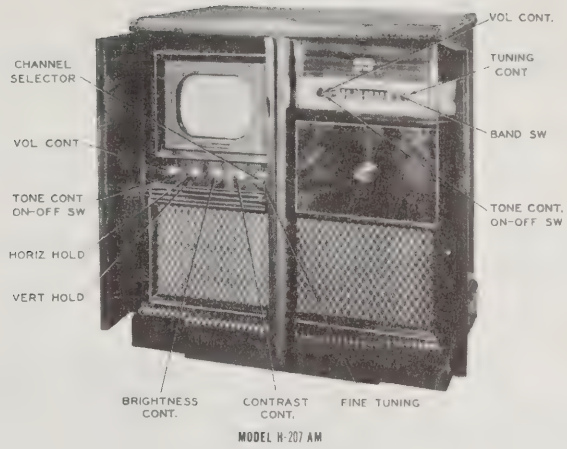
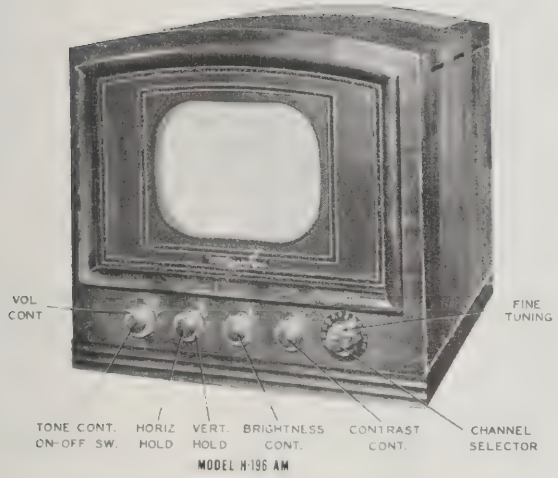
Date 7/49—No. 4913-17 Set No. 65—Folder No. 17



MODEL H-207 AM



MODEL H-196 AM

WESTINGHOUSE MODELS
H-196, H-207

TRADE NAME	Westinghouse Models, H-196, H-207
MANUFACTURER	Westinghouse Electric Corp., Receiver Div., Sunbury, Pa.
TYPE SET	Television Receiver (FM-AM-Phono H-207 only)
TUBES	H-196 Twenty-eight, H-207 Thirty-six
POWER SUPPLY	105-125 Volts, 60 Cycles AC RATING: TV-2.26 Amp., AM-.76 Amps.@ 117 Volts
TUNING RANGE–	Channels 2 through 13, FM 88 to 108MC, AM 540-1600KC

INDEX

	Page		Page
Alignment Instructions	6,7	Photographs (continued)	
Block Diagram	17	RF Tuner (TV)	10
Dial Cord Stringing	27	Resistor Identification (TV)	13,24
Disassembly Instructions	28	Trans., Inductor and Alignment Identification (TV)	4,9
Horizontal Sync. Disc. Adjustment	28	Schematic (AM-FM)	11,26
Parts List and Description	18,19,20,21,22	Schematic (TV)	2
Photographs		Sensitivity Control Adjustment	28
Cabinet-Rear View	27	Tube Placement Chart	5
Capacitor Identification (TV)	12,25	Voltage and Resistance Measurements	8
Chassis-Bottom View (AM-FM)	14,23	Width and Horizontal Linearity Adjustment	28
Chassis-Top View (AM-FM)	15		
Chassis-Top View (TV)	3,16		

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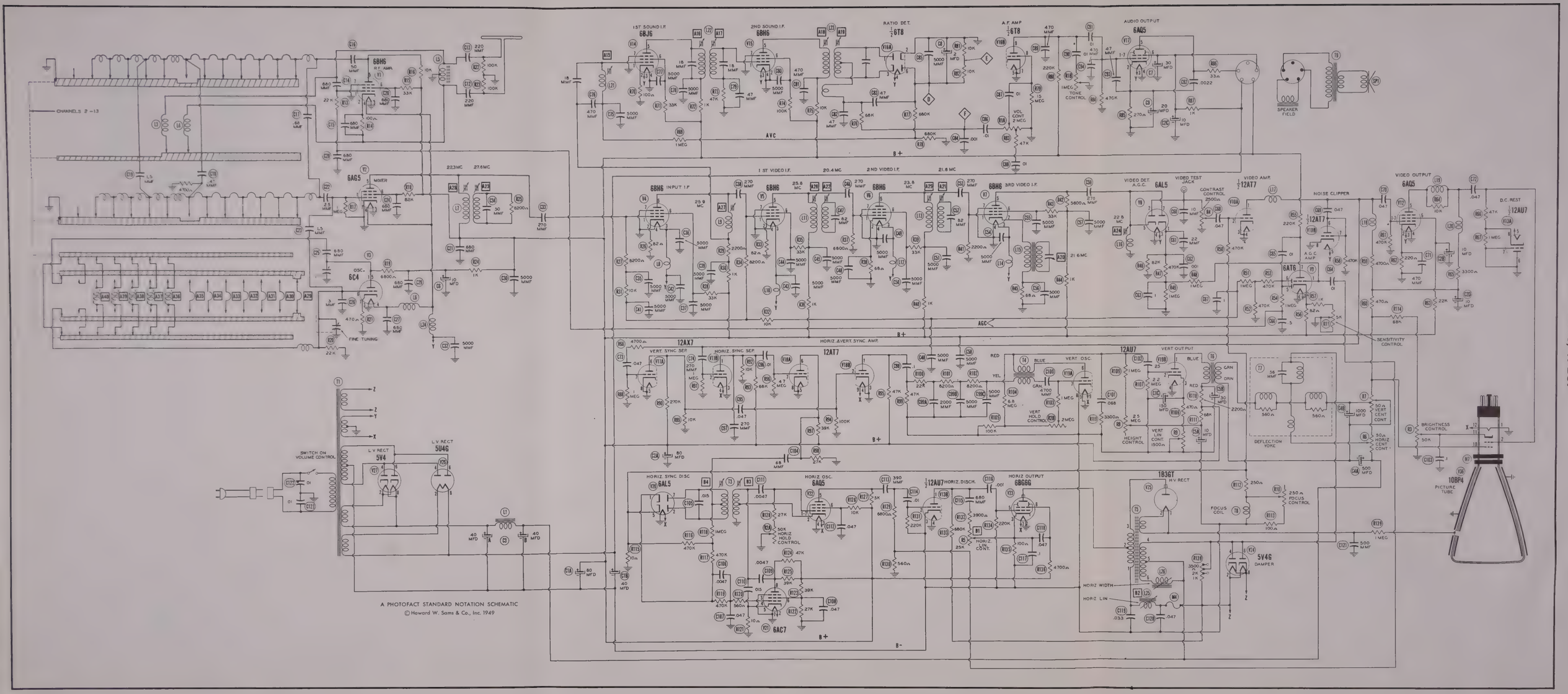
DATE 7/49 4913-17 SET #65 FOLDER 17


WESTINGHOUSE MODELS
H-196, H-207
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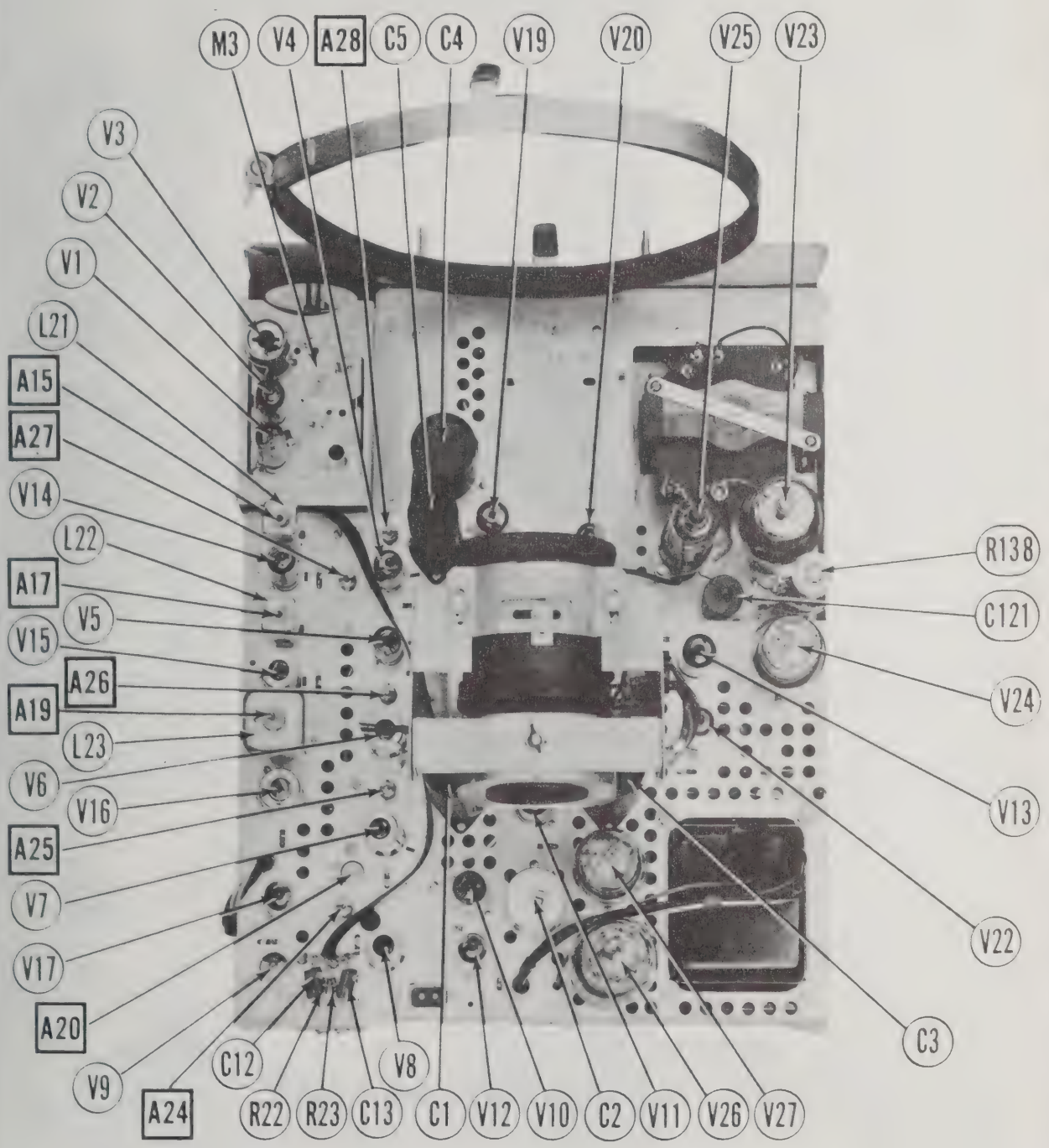

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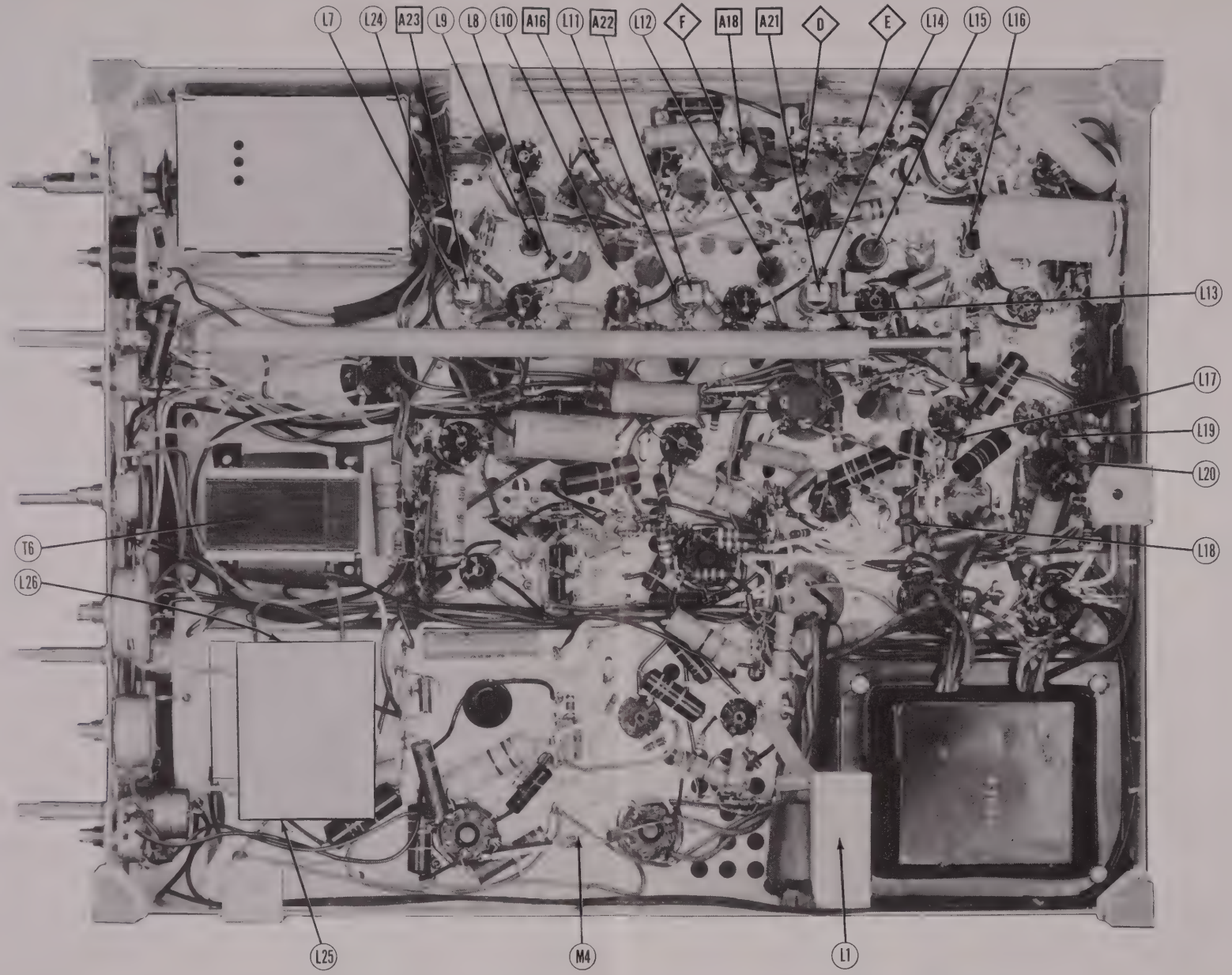
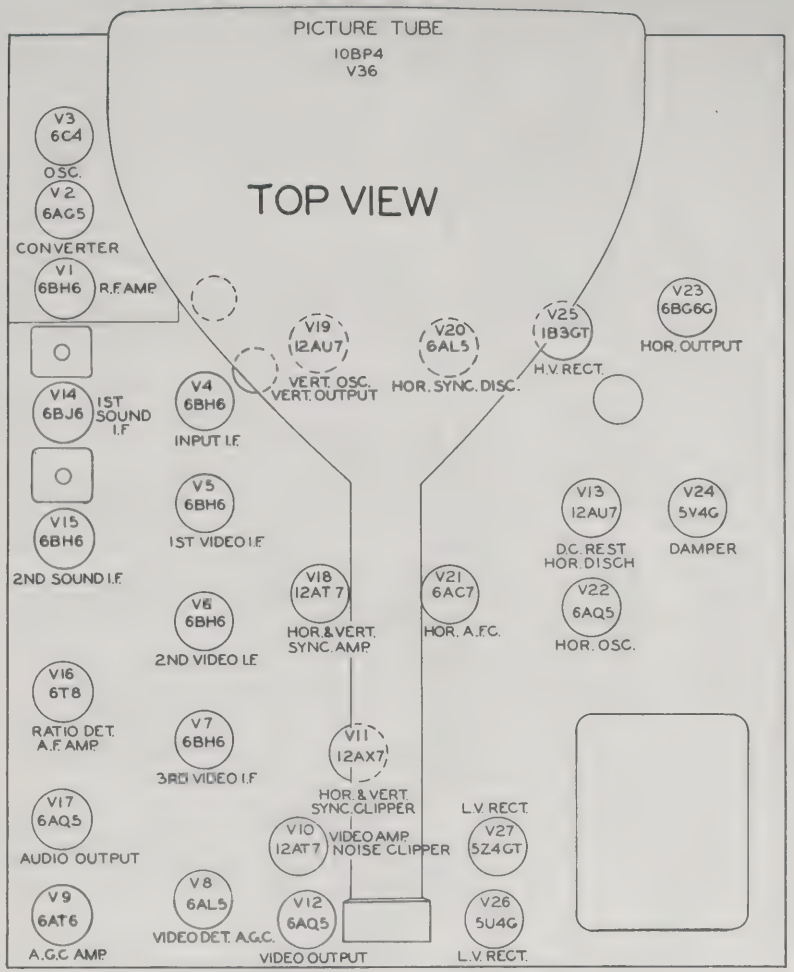
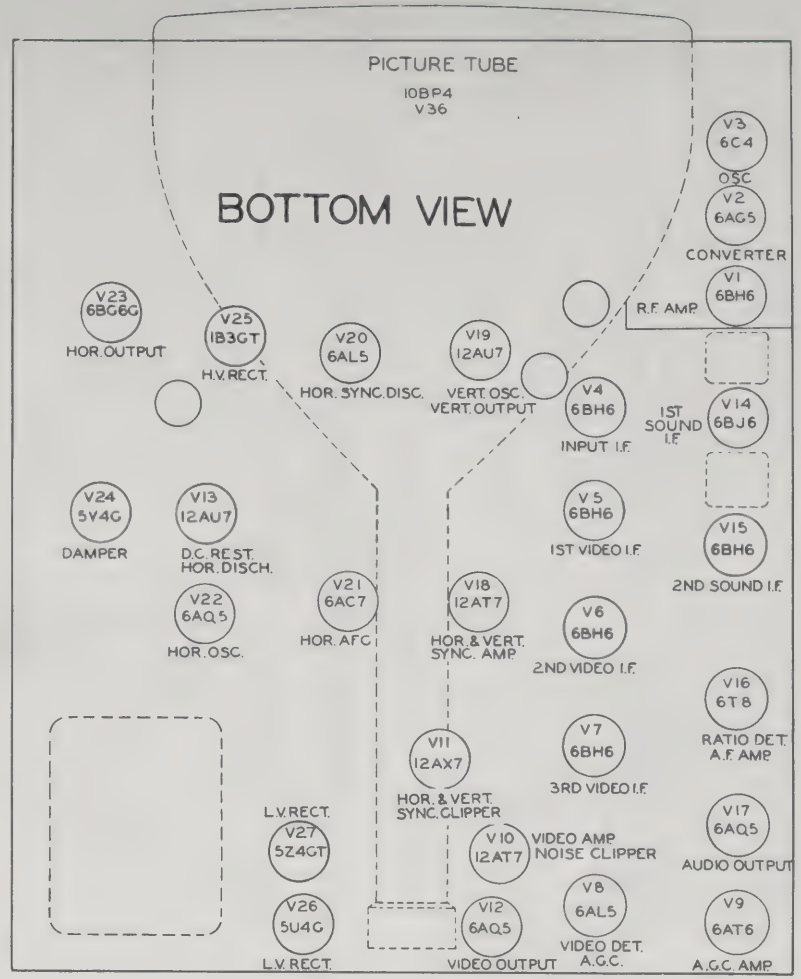


CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION


PICTURE TUBE
10BP4
V36
TOP VIEW
V3 6C4 OSC.
V2 6AG5 CONVERTER
V1 6BH6 R.F. AMP.
V14 6BJ6 1ST SOUND I.F.
V15 6BH6 2ND SOUND I.F.
V16 6T8 RATIO DET. A.F. AMP.
V17 6AQ5 AUDIO OUTPUT
V9 6AT6 A.G.C. AMP.
V8 6AL5 VIDEO DET. A.G.C.
V7 6BH6 3RD VIDEO I.F.
V6 6BH6 2ND VIDEO I.F.
V5 6BH6 1ST VIDEO I.F.
V4 6BH6 INPUT I.F.
V19 12AU7 VERT. OSC. VERT. OUTPUT
V18 12AT7 HOR. & VERT. SYNC. AMP.
V11 12AX7 HOR. & VERT. SYNC. CLIPPER
V10 12AT7 VIDEO AMP. NOISE CLIPPER
V12 6AQ5 VIDEO OUTPUT
V20 6AL5 HOR. SYNC. DISC.
V21 6AC7 HOR. A.F.C.
V25 1B3GT H.V. RECT.
V13 12AU7 D.C. REST. HOR. DISCH.
V22 6AQ5 HOR. OSC.
V27 5Z4GT L.V. RECT.
V26 5U4G L.V. RECT.
V23 6BG6G HOR. OUTPUT
V24 5V4G DAMPER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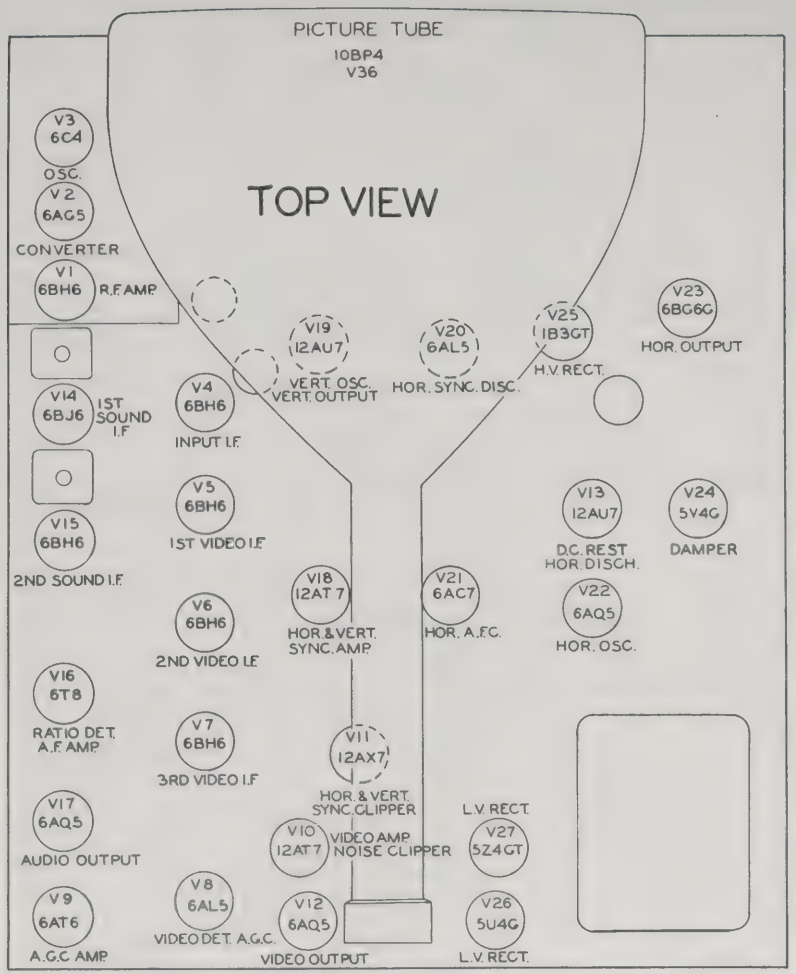
TUBE PLACEMENT CHART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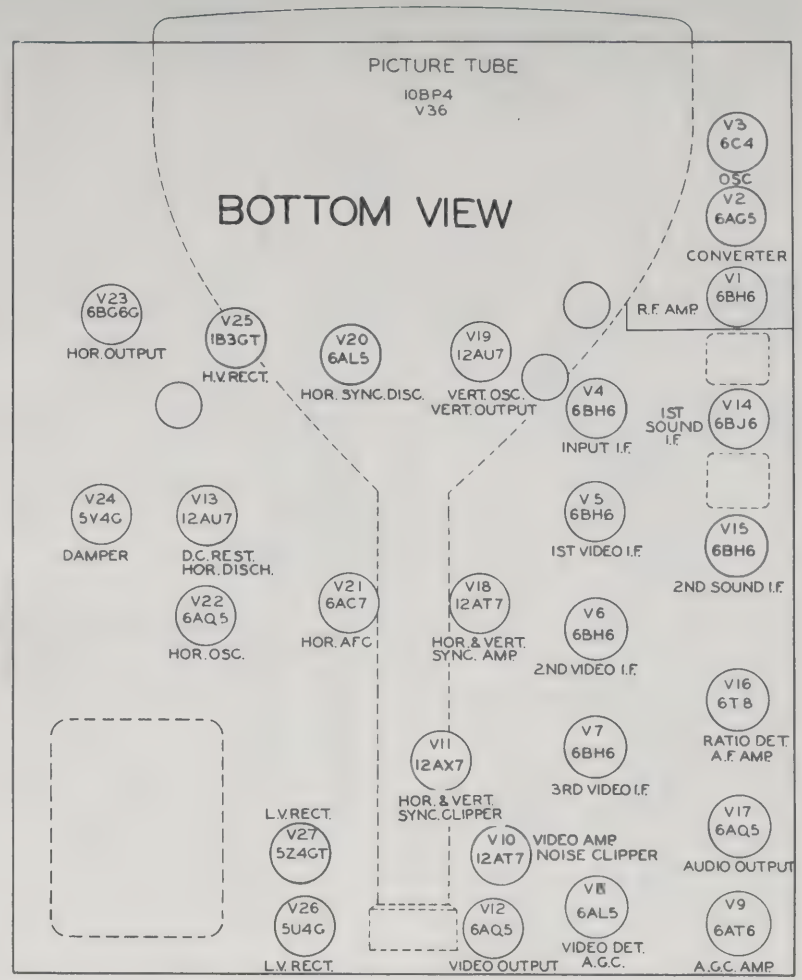
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V9 6AT6 A.G.C. AMP.

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

RADIO ALIGNMENT

PRE-ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning capacitor fully closed and set pointer at last reference mark at left hand edge of dial.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 1 6BA6(V30). Low side to chassis.	455KC	AM (center position)	Tuning cap fully open	Across voice coil	A1, A2	Adjust for maximum output.
2.	.1MFD	High side to pin 1 6BE6(V29). Low side to chassis.	"	"	"	"	A3, A4	" " " "
3.		Loop	1600KC	"	1600KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		Loop	1400KC	"	Tune for maximum output.	"	A6	Rock tuning cap and adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Before starting step 7, connect two 100KΩ matched resistors (± 5%) connected in series from pin 7 6AL5 (V5) to chassis. (See Schematic). Connect the DC Probe of the VTVM to point B and the common lead to point C.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	1000MMF	High side to pin 1 6BA6(V29). Low side to chassis.	10.7MC	FM (Ext. counter clockwise)	Tuning cap fully open	DC Probe to point (A) Common to chassis.	A7, A8 A9	Adjust for maximum deflection.
6.	1000MMF	High side to pin 7 12AT7(V28).Low side to chassis.	"	"	"	"	A10, A11	" " " "
7.	1000MMF	"	"	"	"	DC Probe to point (B) Common lead to point (C)	A12	Adjust for zero reading. A positive or negative reading on either side denotes the correct setting. Remove the two 100KΩ resistors.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
5.	1000MMF	High side to pin 1 6BA6(V29). Low side to chassis.	10.7MC (450KC Sweep)	FM	Tuning cap fully open	Vertical Amp. to point (A) Low side to chassis.	A7, A8 A9	Disconnect stabilizer capacitor (C11). Adjust for maximum amplitude and symmetry as per Fig 1
6.	1000MMF	High side to pin 7 12AT7 (V30). Low side to chassis.	"	"	"	"	A10, A11	Adjust for maximum amplitude and symmetry as per Fig 1.
7.	1000MMF	"	"	"	"	Vertical Amp. to point (B) Low side to chassis.	A12	Reconnect stabilizer cap. Adjust so crossover point occurrs at center of pattern as per Fig 2. If necessary, slightly retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	300Ω carbon res.	High side to terminal 1 of antenna strip. Low side to terminal 2.	105MC	"	105MC	DC Probe to point (A) Low side to chassis.	A13	Adjust for maximum deflection.
9.	300Ω carbon res.	"	"	"	Tune for maximum output.	"	A14	" " " "

FIG. 1

FIG. 2

TV ALIGNMENT

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Attenuate the signal generator to give approximately a 5 volt reading on the VTVM using the 10 volt scale.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9.	500MMF	High side to pin 1 (Grid) of 6AG5 (V2). Low side to chassis.	21.6MC	3	DC Probe to Point (D). Common to chassis.	A15, A16, A17, A18	Adjust for maximum deflection.
10.	500MMF	"	"	"	DC Probe to Point (F). Common to Point (E).	A19	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	500MMF	High side to pin 1 (Grid) of 6AG5 (V2). Low side to chassis.	21.6MC (1MC Sweep)	21.45MC 21.6MC 21.8MC	3	Vert. Amp. to Point D. Low side to chassis.	A15, A16, A17, A18	Disconnect stabilizer cap (C8). Adjust for maximum amplitude and symmetry as per Fig 3.
10.	500MMF	"	"	21.35MC 21.6MC 21.85MC	3	Vert. Amp. to Point C. Low side to chassis.	A19	Reconnect stabilizer cap. Adjust A19 so 21.6MC marker appears at center of pattern as per Fig 4.

VIDEO IF ALIGNMENT

Connect the bias unit shown in Fig 5 to the AGC line.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	500MMF	High side to pin 1 (Grid) of 6AG5 (V2). Low side to chassis.	21.6MC	3	DC Probe to Video Test Jack on chassis. Common to chassis.	A20	Adjust for minimum deflection.
12.	500MMF	"	21.6MC	"	"	A21	" " " "
13.	500MMF	"	20.4MC	"	"	A22	" " " "
14.	500MMF	"	27.6MC	"	"	A23	" " " "
15.	500MMF	"	22.8MC	"	"	A24	Adjust for maximum deflection.
16.	500MMF	"	23.8MC	"	"	A25	Adjust for maximum deflection. If A25 required adjustment, repeat step 12.
17.	500MMF	"	25.6MC	"	"	A26	Adjust for maximum deflection. If A26 required adjustment, repeat step 13.
18.	500MMF	"	25.9MC	"	"	A27	Adjust for maximum deflection.
19.	500MMF	"	22.3MC	"	"	A28	Adjust for maximum deflection. If A28 required adjustment, repeat step 14.

OVERALL VIDEO IF RESPONSE CHECK

Leave the bias unit connected for this visual check.
Shunt the vertical amplifier connections of the oscilloscope with a 500MMF capacitor and insert a 200KΩ resistor in series with the high side lead. Connect the horizontal amplifier to the synchronized sweep voltage output of the signal generator.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
20.	500MMF	High side to pin 1 (Grid) of 6AG5 (V2). Low side to chassis	25MC (12MC Sweep)	21.6MC 22.5MC 23.0MC 25.3MC 26.1MC 27.0MC	3	Vert. Amp. thru 200KΩ to video test jack. Low side to chassis. (See instructions above)	A20 thru A28	Check to see that markers appear on pattern obtained as per Fig 6. Slight adjustment of A24 and A25 will usually properly place the markers. If readjustment of A25, A26 or A28 is made their respective traps must be rechecked. Do not adjust any trap except A22 to correct the response curve.

TV OSCILLATOR ALIGNMENT

The RF amplifier and mixer circuits of the tuner are very stable and normally do not require adjustment in the field.
When adjusting the oscillator circuits, turn the fine tuning control to the mid point of its tuning range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
21.	Two 150Ω carbon res.	Insert 150Ω resistor in each generator lead and connect across antenna terminals.	215.75MC (Unmod.)	13	DC Probe to Point (D). Common to chassis.	A29	Expand or compress the oscillator coil for maximum deflection.
22.	"	"	209.75MC	12	"	A30	"
			203.75MC	11		A31	"
			197.75MC	10		A32	"
			191.75MC	9		A33	"
			185.75MC	8		A34	"
			179.75MC	7		A35	"
23.	"	"	87.75MC	6	"	A36	Adjust slug for maximum deflection.
			81.75MC	5		A37	" " " " "
			71.75MC	4		A38	" " " " "
			65.75MC	3		A39	" " " " "
			59.75MC	2		A40	" " " " "

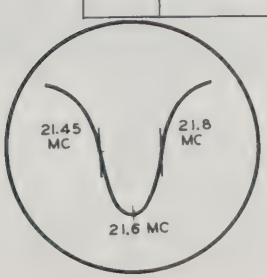


FIG. 1

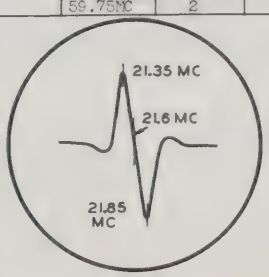


FIG. 2

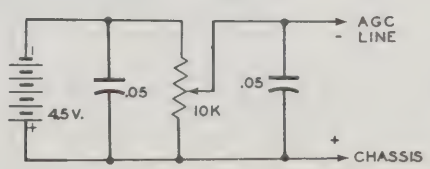


FIG. 3

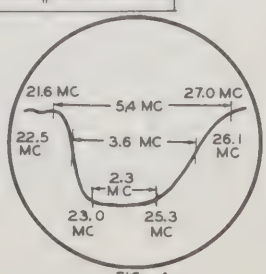


FIG. 4

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
	V 1	6BH6	0V	1VDC	0V	6.3VAC	170VDC	135VDC	0V		
	V 2	6AG5	-.8VDC	0V	0V	6.3VAC	245VDC	115VDC	0V		
	V 3	6C4	170VDC	0V	0V	6.3VAC	170VDC	§-5.6VDC	3.8VDC		
	V 4	6BH6	-.8VDC	.7VDC	6.2VAC	0V	225VDC	160VDC	0V		
	V 5	6BH6	-.1VDC	.7VDC	6.2VAC	0V	235VDC	160VDC	0V		
	V 6	6BH6	0V	.7VDC	6.2VAC	0V	235VDC	160VDC	0V		
	V 7	6BH6	0V	.7VDC	6.2VAC	0V	190VDC	150VDC	0V		
	V 8	6AL5	.3VDC	-.1VDC	6.3VAC	0V	0V	0V	0V		
	V 9	6AT6	0V	3.6VDC 16VDC	6.3VAC	0V	-.1VDC	-.1VDC	235VDC		
	V 10	12AT7	215VDC	-.6VDC	0V	0V	0V	-.6VDC	-.6VDC	0V	6.3VAC
	V 11	12AX7	7.2VDC	-.4VDC	0V	0V	0V	27VDC	-.3VDC	0V	6.3VAC
	V 12	6AQ5	0V	7VDC	6.3VAC	0V	185VDC	185VDC	0V		
	V 13	12AU7	† 85VDC	† -38VDC	† 0V	0V	0V	0V	0V	.6VDC	6.3VAC
	V 14	6BJ6	-.1VDC	1.2VDC	6.3VAC	0V	235VDC	135VDC	0V		
	V 15	6BH6	-.3VDC	0V	6.3VAC	0V	208VDC	105VDC	0V		
	V 16	6T8	-.8VDC	-1.3VDC	-.8VDC	6.3VAC	0V	0V	0V	-.8VDC	100VDC
	V 17	6AQ5	0V	10VDC	6.3VAC	0V	205VDC	225VDC	0V		
	V 18	12AT7	70VDC	-.3VDC	0V	0V	0V	63VDC	-.4VDC	0V	6.3VAC
	V 19	12AU7	† 300VDC	† 0V	†7VDC †15VDC	0V	0V	†28VDC †84VDC	† -2.4VDC	† 0V	6.3VAC
	V 20	6AL5	-.6VDC	-3VDC	6.3VAC	0V	-2VDC	0V	-5.5VDC		
	V 21	6AC7	0V	6.3VAC	0V	-.4VDC	0V	90VDC	0V	190VDC	
	V 22	6AQ5	-24VDC	0V	6.3VAC	0V	165VDC	165VDC	-24VDC		
	V 23	6BG6G	0V	0V	† 9.7VDC	0V	† -3VDC	† 400VDC	6.3VAC	† 240VDC	TOP CAP *
	V 24	5V4G	0V	† 400VDC	0V	† 350VDC	0V	† 350VDC	0V	† 400VDC	
	V 25	1B3GT	* DO NOT MEASURE								
	V 26	5U4G	0V	340VDC	0V	330VAC	190VDC	330VAC	340VDC	340VDC	
	V 27	5V4G	0V	380VDC	340VDC	330VAC	0V	330VAC	0V	380VDC	
‡	V 28	12AT7	195VDC	.1VDC	1VDC	0V	0V	123VDC	-2.2VDC	0V	6.3VAC
‡	V29A	6BE6	§ -6.6VDC	0V	0V	6.5VAC	250VDC	125VDC	0V		
††	V29B	6BE6	§ -8.8VDC	0V	0V	6.5VAC	250VDC	135VDC	-.1VDC		
††	V30	6BA6	-.1VDC	0V	0V	6.5VAC	235VDC	107VDC	1.1VDC		
‡	V31	6BA6	0V	0V	0V	6.5VAC	235VDC	110VDC	1.2VDC		
‡	V32	6AL5	-.8VDC	0V	0V	6.5VAC	0V	0V	-.4VDC		
††	V33	6AV6	-.4VDC	0V	0V	6.3VAC	-.3VDC	.7VDC	90VDC		
††	V34	6V6GT	0V	6.3VAC	250VDC	265VDC	0V	220VDC	0V	13.5VDC	
††	V35	5Y3GT	0V	295VDC	0V	300VAC	0V	300VAC	0V	295VDC	
	V36	10BP4	0V	.5VDC	PIN 10 260VDC	PIN 11 108VDC	PIN 12 6.3VAC				

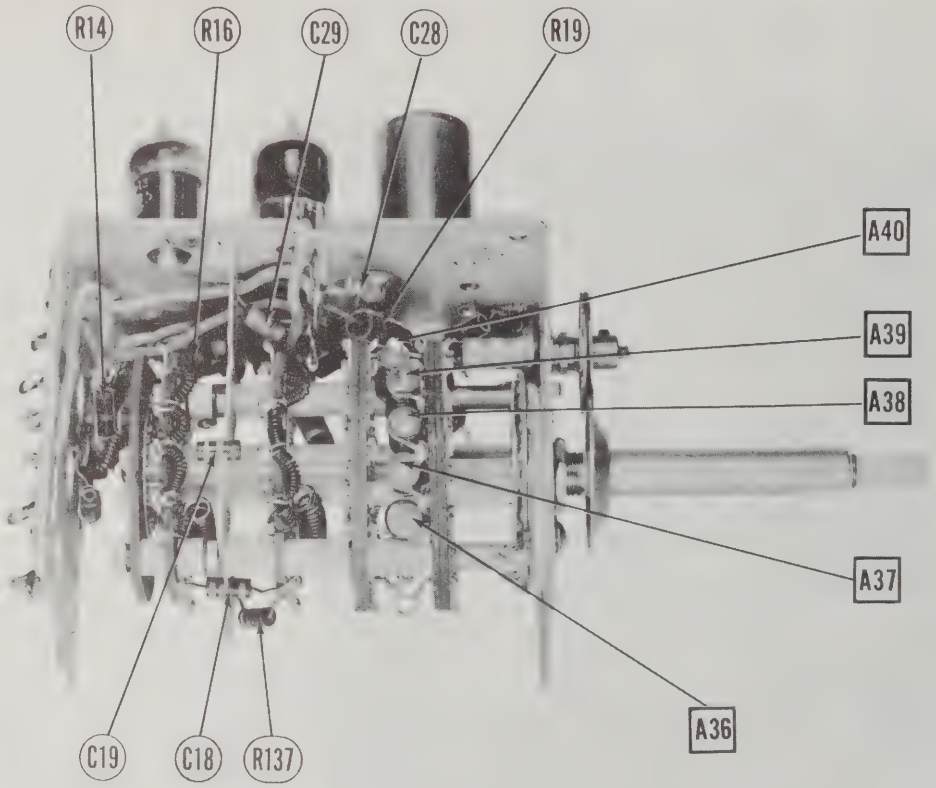
* Do not measure
† Measured from pin 8 of V19
§ Measured with VTVM
‡ Taken in FM position
†† Taken in broadcast position

RESISTANCE READINGS

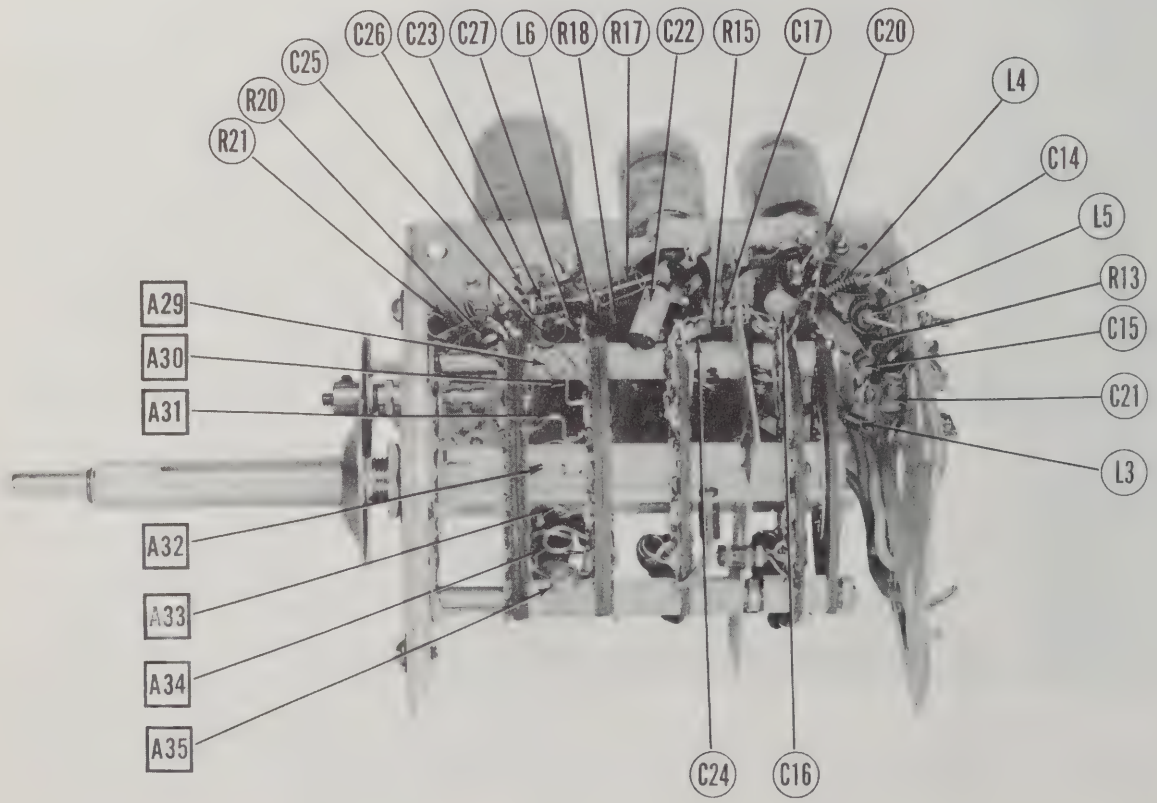
	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
	V 1	6BH6	1.4 Meg.	100Ω	0Ω	.2Ω	*11KΩ	*36KΩ	0Ω		
	V 2	6AG5	1 Meg.	0Ω	0Ω	.2Ω	*100Ω	*90KΩ	0Ω		
	V 3	6C4	*8.5KΩ	Inf.	0Ω	.2Ω	*8.5KΩ	22KΩ	470Ω		
	V 4	6BH6	2 Meg.	82Ω	1Ω	0Ω	*3.3KΩ	*34KΩ	0Ω		
	V 5	6BH6	2 Meg.	82Ω	1Ω	0Ω	*1000Ω	*34KΩ	0Ω		
	V 6	6BH6	6.8KΩ	68Ω	1Ω	0Ω	*1000Ω	*34KΩ	0Ω		
	V 7	6BH6	2.2KΩ	68Ω	1Ω	0Ω	*6KΩ	*34KΩ	0Ω		
	V 8	6AL5	80KΩ	2.5KΩ	.2Ω	0Ω	.2Ω	0Ω	.2Ω		
	V 9	6AT6	1.2 Meg.	5.8KΩ 1000Ω	.2Ω	0Ω	950KΩ	950KΩ	*220KΩ		
	V 10	12AT7	**5.5KΩ	500KΩ	0Ω	0Ω	0Ω	500KΩ	500KΩ	0Ω	.2Ω
	V 11	12AX7	*25KΩ	1 Meg.	0Ω	0Ω	0Ω	*22KΩ	1 Meg.	0Ω	.2Ω
	V 12	6AQ5	470KΩ	220Ω	.2Ω	0Ω	**4KΩ	*22KΩ	470KΩ		
	V 13	12AU7	** 650KΩ	† 220KΩ	† 0Ω	0Ω	0Ω	0Ω	0Ω	1 Meg.	.2Ω
	V 14	6BJ6	1.5 Meg.	100Ω	.2Ω	0Ω	*1000Ω	*34KΩ	0Ω		
	V 15	6BH6	47KΩ	0Ω	.2Ω	0Ω	*10KΩ	*100KΩ	0Ω		
	V 16	6T8	Inf.	20KΩ	Inf.	.2Ω	0Ω	0Ω	0Ω	15 Meg.	* 220KΩ
	V 17	6AQ5	470KΩ	270Ω	.2Ω	0Ω	*1500Ω	*1000Ω	470KΩ		
	V 18	12AT7	*50KΩ	100KΩ	0Ω	0Ω	0Ω	*22KΩ	4.7 Meg.	0Ω	.2Ω
	V 19	12AU7	*3KΩ	† 2 Meg.	†3KΩ †500Ω	0Ω	0Ω	*2.5 Meg *1 Meg.	†1.2 Meg	†0Ω	.2Ω
	V 20	6AL5	900KΩ	1.4 Meg.	.2Ω	0Ω	10Ω	0Ω	1.4 Meg.		
	V 21	6AC7	0Ω	.2Ω	0Ω	1.4 Meg	10Ω	*20KΩ	0Ω	*20KΩ	
	V 22	6AQ5	27KΩ	9Ω	.2Ω	0Ω	*5KΩ	*10KΩ	27KΩ		
	V 23	6BG6G	Inf.	0Ω	†100Ω	Inf.	†220KΩ	110KΩ	.2Ω	*5KΩ	**6KΩ
	V 24	5V4G	Inf.	**6KΩ	Inf.	** 250Ω	Inf.	*250Ω	Inf.	** 6KΩ	
	V 25	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	**6KΩ
	V 26	5U4G	0Ω	†16KΩ	Inf.	†20Ω	†50KΩ	†20Ω	†120KΩ	†16KΩ	
	V 27	5V4G	0Ω	†120KΩ	†16KΩ	†20Ω	Inf.	†20Ω	Inf.	†120KΩ	
‡	V 28	12AT7	‡ 6KΩ	400KΩ	83Ω	0Ω	0Ω	‡ 13KΩ	450KΩ	0Ω	.5Ω
††	V 29	6BE6	23KΩ	0Ω	0Ω	.5Ω	‡ 5KΩ	‡ 12KΩ	2 Meg.		
††	V 30	6BA6	1.2 Meg.	0Ω	0Ω	.5Ω	‡ 4KΩ	‡ 34KΩ	68Ω		
‡	V31	6BA6	.5Ω	0Ω	0Ω	.5Ω	‡ 3.5KΩ	‡ 33KΩ	68Ω		
‡	V32	6AL5	Inf.	Inf.	0Ω	1Ω	0Ω	0Ω	15KΩ		
††	V33	6AV6	10 Meg.	0Ω	0Ω	.5Ω	470KΩ	150KΩ	‡ 420KΩ		
††	V34	6V6GT	.5Ω	.6Ω	‡ 600Ω	‡ 200Ω	480KΩ	250KΩ	0Ω	270Ω	
††	V35	5Y3GT	Inf.	120KΩ	Inf.	85Ω	Inf.	80Ω	Inf.	120KΩ	
	V36	10BP4	0Ω	1 Meg.	PIN 10 **350Ω	PIN 11 **68KΩ	PIN 12 .2Ω				

* Measured from pin 8 of V26
** Measured from pin 8 of V27
† Measured from pin 8 of V19
‡ Measured from pin 8 of V35
†† Taken in broadcast position
‡ Taken in FM position

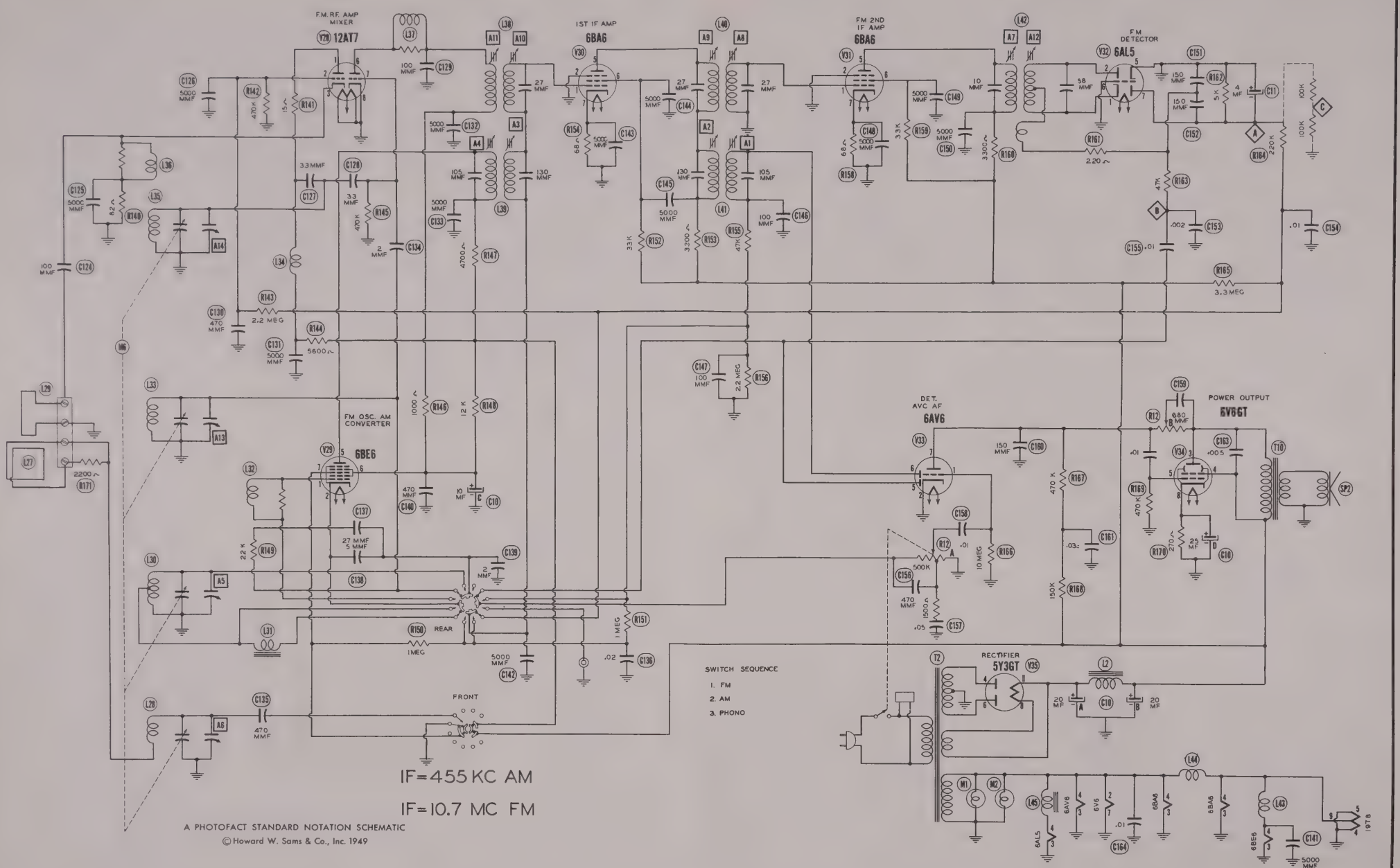
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

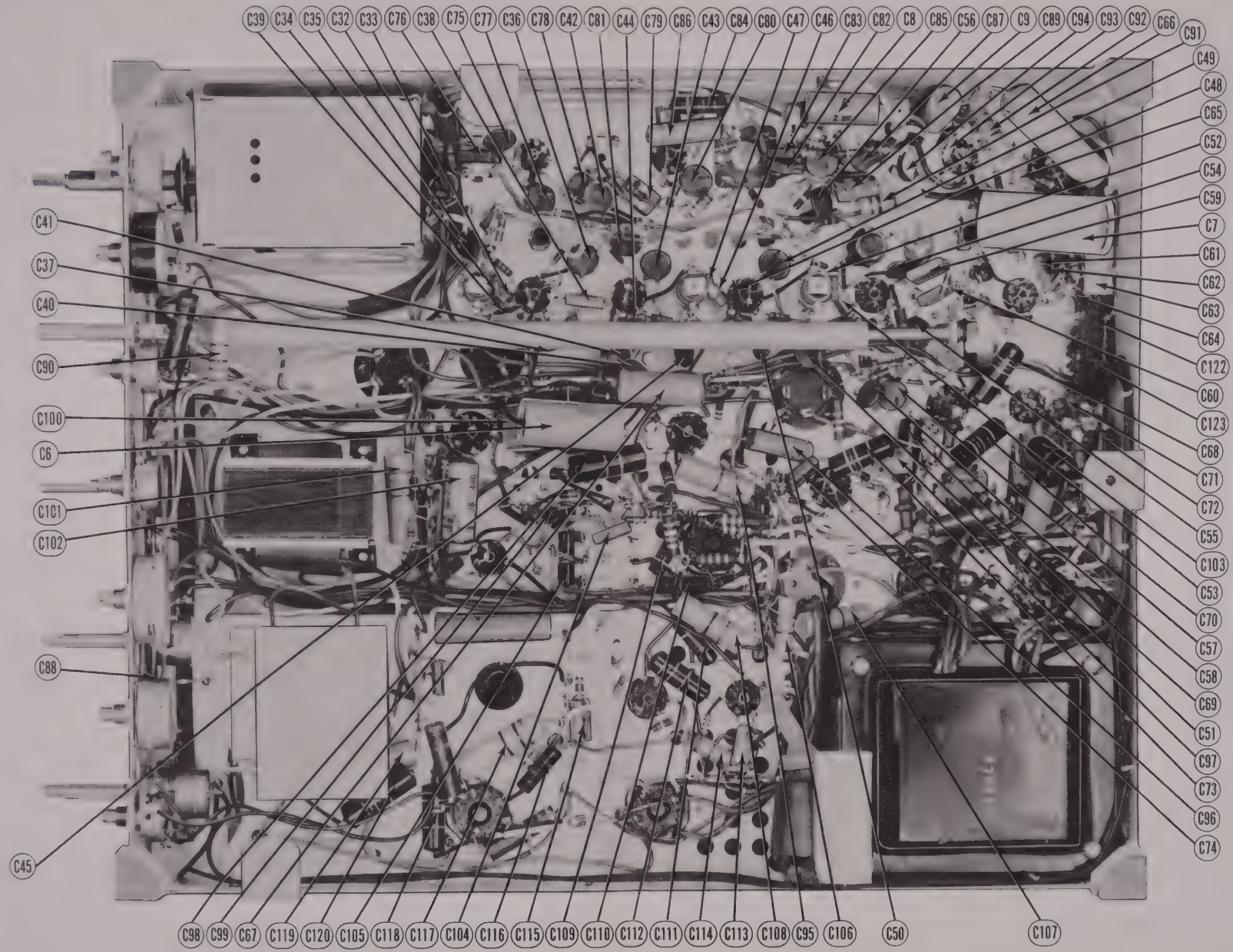


RF TUNER-LEFT SIDE

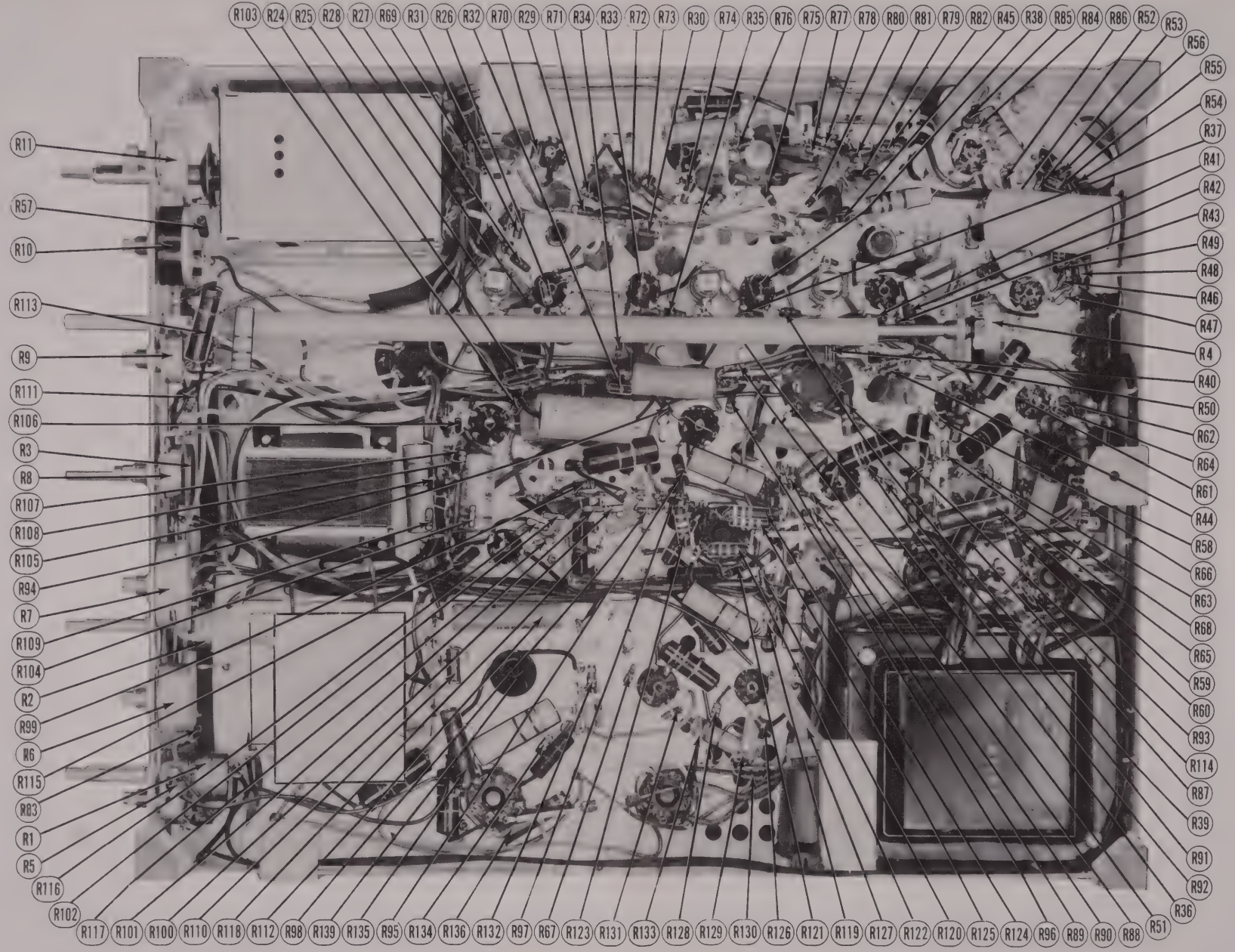


RF TUNER-RIGHT SIDE

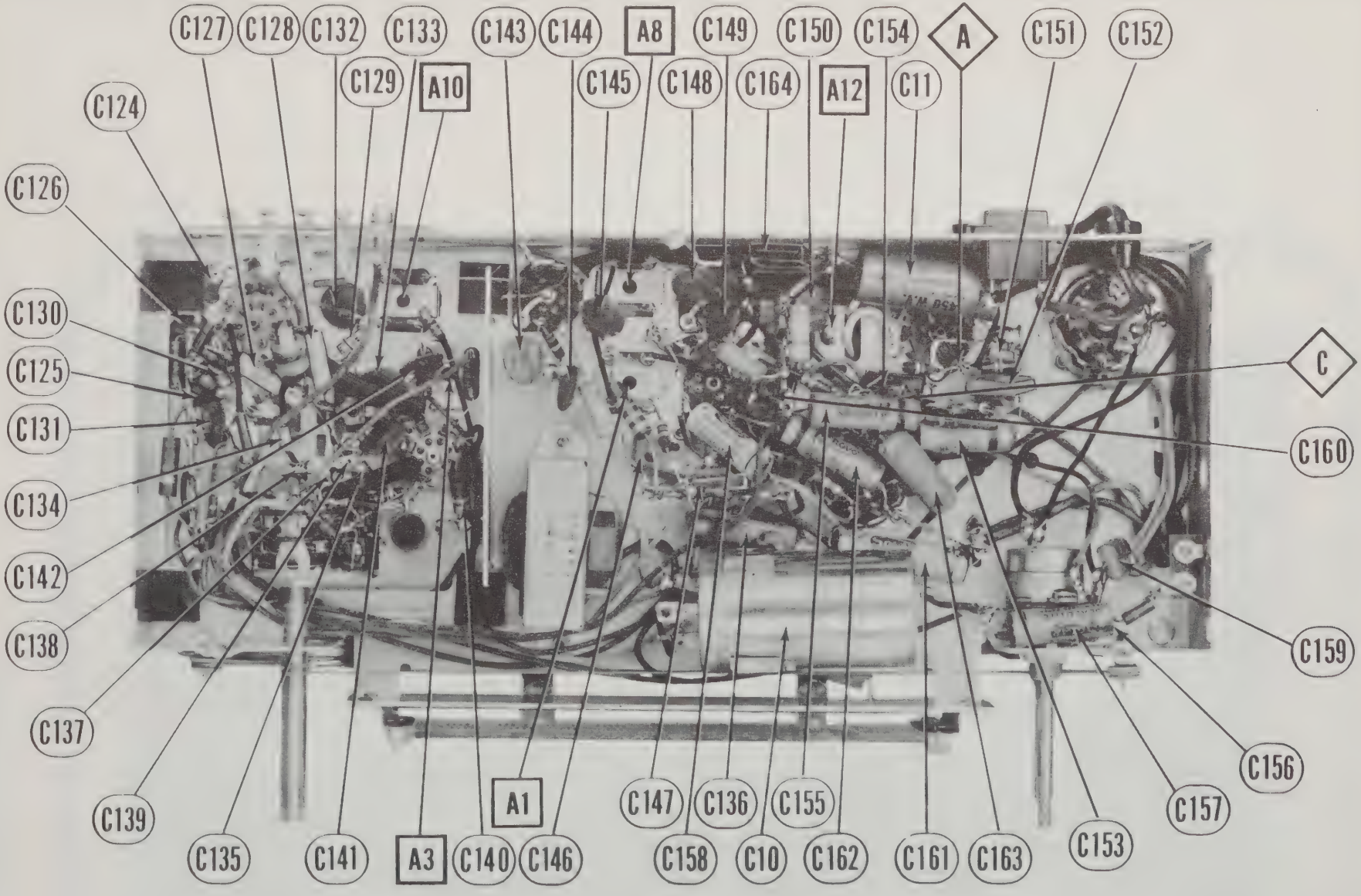

F.M. R.F. AMP MIXER
V28 12AT7
1ST IF AMP
V30 6BA6
FM 2ND IF AMP
V31 6BA6
FM DETECTOR
V32 6AL5
FM OSC. AM CONVERTER
V29 6BE6
DET. AVC AF
V33 6AV6
POWER OUTPUT
V34 6V6GT
RECTIFIER
V35 5Y3GT
REAR
FRONT
SWITCH SEQUENCE
1. FM
2. AM
3. PHONO
IF=455 KC AM
IF=10.7 MC FM
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1949



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION


C127
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A
C151
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C164
A12
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C146
A1
C147
C136
C155
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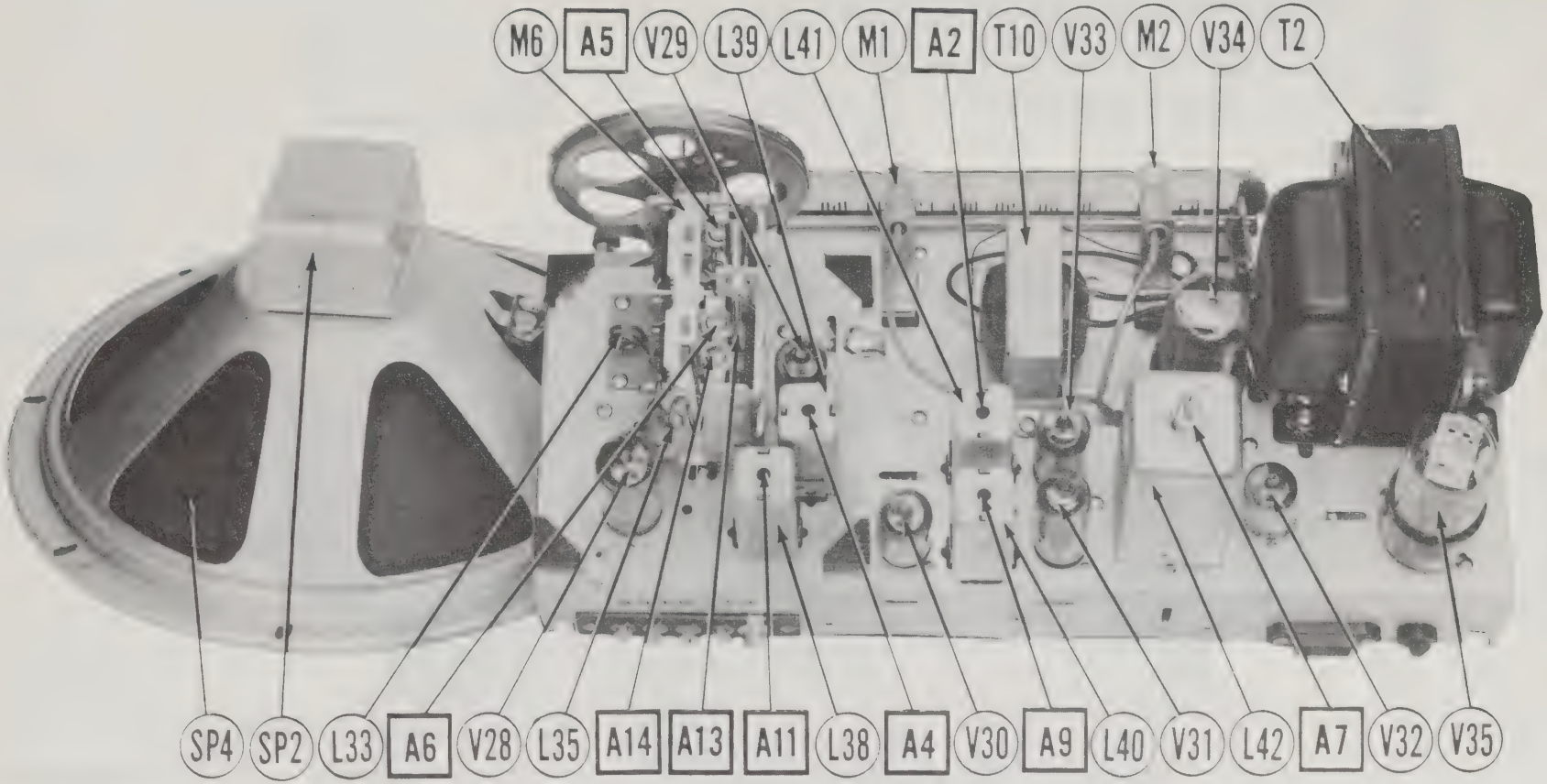
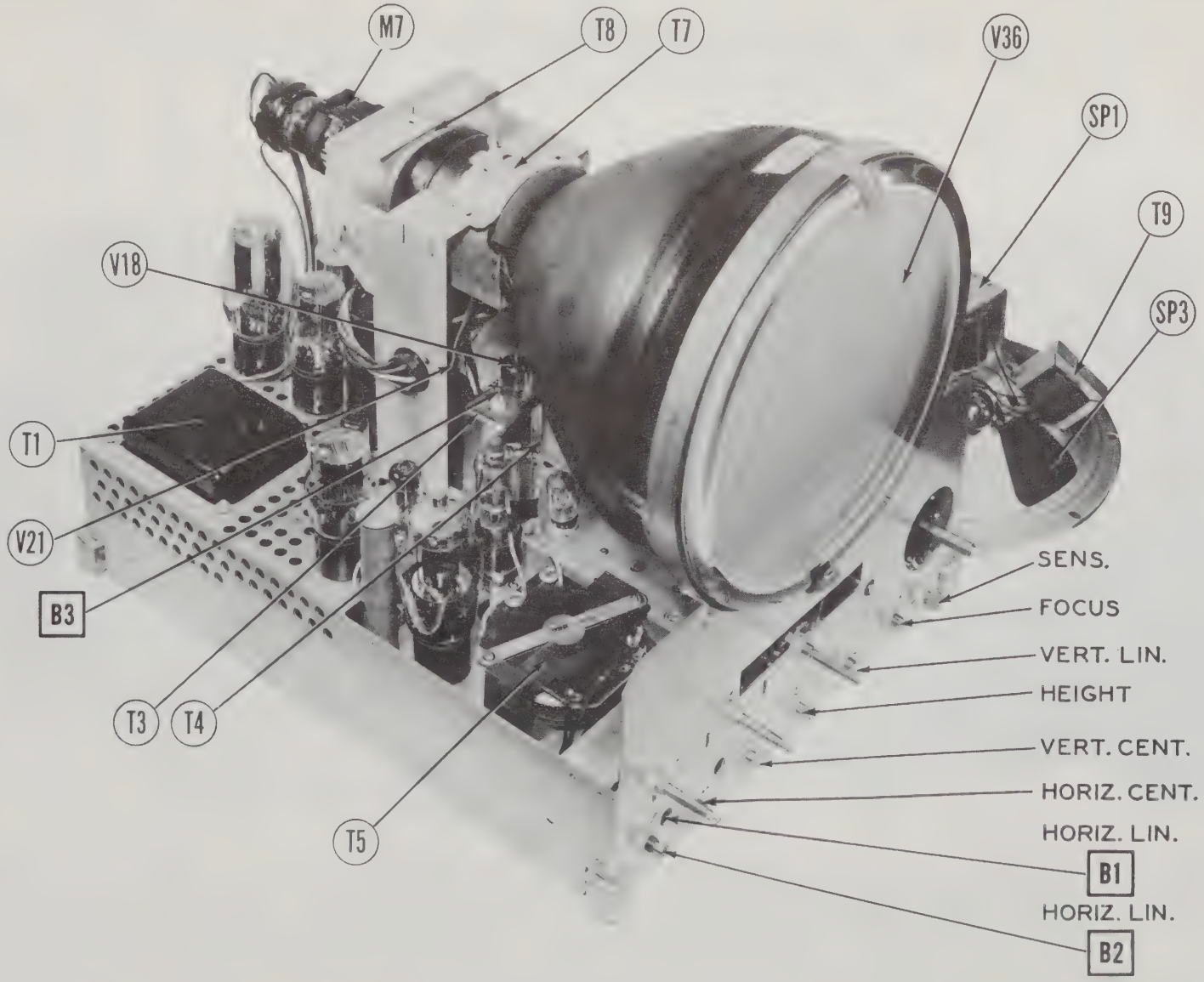
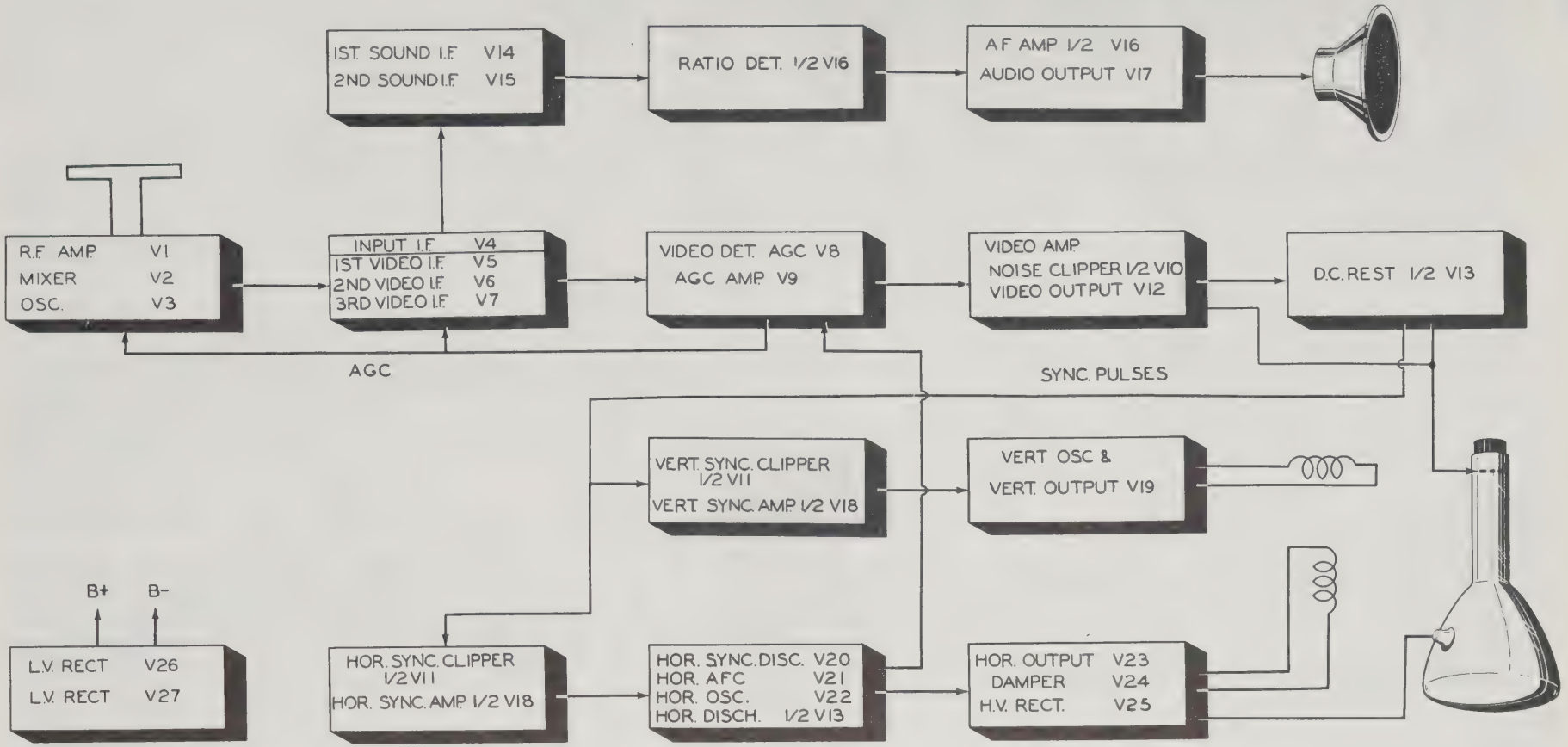
C163
C153
C157
C156
C159
C160
C
AM-FM CHASSIS-BOTTOM VIEW



AM-FM CHASSIS-TOP VIEW



CHASSIS TOP VIEW



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: WESTING. PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	[illegible]	[illegible]	[illegible]	
V2	Mixer	[illegible]	[illegible]	[illegible]	
V3	Oscillator	[illegible]	[illegible]	[illegible]	
V4	Input IF	[illegible]	[illegible]	[illegible]	
V5	1st Video IF	[illegible]	[illegible]	[illegible]	
V6	2nd Video IF	[illegible]	[illegible]	[illegible]	
V7	3rd Video IF	[illegible]	[illegible]	[illegible]	
V8	Video Det.-AGC	[illegible]	[illegible]	[illegible]	
V9	AGC Amp.	[illegible]	[illegible]	[illegible]	
V10	Video Amp- Noise Clipper	[illegible]	[illegible]	9A	
V11	Hor. & Vert. Sync. Sep.	[illegible]	[illegible]	9A	
V12	Video Output	[illegible]	[illegible]	7BZ	
V13	DC Rest.-Hor. Disch.	[illegible]	[illegible]	9A	
V14	1st Sound IF	[illegible]	[illegible]	7BM	
V15	2nd Sound IF	[illegible]	[illegible]	7BM	
V16	Ratio Det.-AF	[illegible]	[illegible]	6A	
V17	Audio Output	[illegible]	[illegible]	7BZ	
V18A	Horiz. & Vert. Sync. Amp.	12AU7	12AU7	9A	The 12AT7 gives better vertical hold performance. Replace 12AU7 with 12AT7. no wiring change required.
V18B	Horiz. & Vert. Sync. Amp.	12AU7	12AU7	9A	
V19	Vert. Osc.- Vert. Output	12AU7	12AU7	9A	
V20	Horiz. Sync. Disc.	[illegible]	[illegible]	6BT	
V21	Horiz. AFC	[illegible]	[illegible]	6AN	
V22	Horiz. Osc.	[illegible]	[illegible]	7BZ	
V23	Horiz. Output	[illegible]	[illegible]	9L	
V24	[illegible]	[illegible]	[illegible]	[illegible]	
V25	[illegible]	[illegible]	[illegible]	[illegible]	
V26	[illegible]	[illegible]	[illegible]	[illegible]	

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	WESTING. PART No.	IRC PART No.		
R54	1 Meg.	½	RC20AE105M	BTS-1 Meg.	AGC Network	
R55	220KΩ	½	RC20AE224M	BTS-220K	AGC Amp. Plate	
R56	82Ω	1	RC20AE823M		AGC Amp. Cathode	
R57	1000Ω	½	RC20AE102M	BTS-1000	Voltage Divider	
R58	470KΩ	½	RC20AE474K	BTS-470K	Noise Clipper Load	
R59	4700Ω	2	RC40AE472J	BT-2-4700	Video Amp. Plate	
R60	470Ω	1	RC30AE471M	BTA-470	Video Amp. Decoupling	
R61	470KΩ	½	RC20AE474K	BTS-470K	Video Output Grid	
R62	220Ω	1	RC30AE221K		Video Output Cathode	10%
R63	22KΩ	½	RC20AE223M	BTS-22K	Video Output Screen Decoupling	
R64	10KΩ	½	RC20AE103K	BTS-10K	Peaking Coil Shunt	10%
R65	3300Ω	5	V5924	ABA-3500 #	Video Output Plate	
R66	47KΩ	½	RC20AE473M	BTS-47K	Picture Tube Grid	
R67	1 Meg.	½	RC20AE105M	BTS-1 Meg.	DC Restorer Load	
R68	4700Ω	½	RC20AE472J	BTS-4700-5%	Phase Correction	5%
R69	1 Meg.	½	RC20AE105M		AVC Network	
R70	100Ω	½	RC20AE101K		1st Sound IF Cathode	
R71	33KΩ	½	RC20AE333M	BTS-33K	1st Sound IF Screen Decoupling	
R72	1000Ω	½	RC20AE102M	BTS-1000	1st Sound IF Plate Decoupling	
R73	47KΩ	½	RC20AE473M		2nd Sound IF Grid	
R74	100KΩ	½	RC20AE104M	BTS-100K	2nd Sound IF Screen Decoupling	
R75	10KΩ	½	RC20AE103M	BTS-10K	2nd Sound IF Plate Decoupling	
R76	68KΩ	½	RC20AE683M	BTS-68K	De-emphasis	
R77	680KΩ	½	RC20AE684M	BTS-680K	AVC Network	
R78	680KΩ	½	RC20AE684M	BTS-680K	" "	
R79	15 Meg.	½	RC20AE156M	BTS-15 Meg.	AF Grid	
R80	220KΩ	½	RC20AE224M	BTS-220K	AF Plate	
R81	10KΩ	½	RC20AE103J	BTS-10K-5%	Ratio Det. Diode Load	5%
R82	10KΩ	½	RC20AE103J	BTS-10K-5%	" " " "	5%
R83	47KΩ	½	RC20AE473M	BTS-47K	Tone Compensation	
R84	470KΩ	½	RC20AE474K	BTS-470K	Output Grid	
R85	270Ω	1	RC30AE271M	BW-1-270	Output Cathode	10%
R86	33Ω	½	RC20AE330M		Parasitic Suppressor	
R87	1000Ω	2	RC40AE102M	BT-2-1000	Filter	
R88	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Vert. Sync. Clipper Grid	
R89	10KΩ	½	RC20AE103K	BTS-10K	Vert. Sync. Clipper Bleeder	10%
R90	270KΩ	1	RC30AE274K	BTA-270K	Vert. Sync. Clipper Plate	
R91	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Horiz. Sync. Clipper Grid	
R92	10KΩ	½	RC20AE103K	BTS-10K	Horiz. Sync. Clipper Bleeder	10%
R93	68KΩ	1	RC30AE683K	BTA-68K	Horiz. Sync. Clipper Plate	10%
R94	100KΩ	½	RC20AE104M	BTS-100K	Vert. Sync. Amp. Grid	
R95	47KΩ	1	RC30AE472K	BTA-47K	Vert. Sync. Amp. Plate	
R96	4.7 Meg.	½	RC20AE475M	BTS-4.7 Meg.	Horiz. Sync. Amp. Grid	
R97	39KΩ	1	RC30AE393K	BTA-39K	Horiz. Sync. Amp. Plate	10%
R98	27KΩ	½	RC20AE273K	BTS-27K	Voltage Divider	10%
R99	47KΩ	½	RC20AE473M	BTS-47K	Differentiator	
R100	22KΩ	½	RC20AE223M	BTS-22K	Integrator	
R101	8200Ω	½	RC20AE822M	BTS-8200	"	10%
R102	8200Ω	½	RC20AE822M	BTS-8200	"	10%
R103	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Vert. Osc. Grid See Note	
R104	6.8 Meg.	½	RC20AE685M	BTS-6.8 Meg.	Voltage Divider	
R105	100KΩ	½	RC20AE104M	BTS-100K	" "	
R106	470Ω	½	RC20AE471M	BTS-470	Vert. Output Cathode	
R107	2.2 Meg.	½	RC20AE225M	BTS-2.2 Meg.	Vert. Output Grid	
R108	3300Ω	½	RC20AE332M	BTS-3300	Vert. Peaking	
R109	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Vert. Osc. Plate	
R110	2200Ω	1	RC30AE222M	BTA-2200	Vert. Output Decoupling	
R111	68KΩ	½	RC20AE683M	BTS-68K	Vert. Osc. Decoupling	
R112	250Ω	10	V5922	AB-250	Bias Network	
R113	100Ω	2	RC40AE101M	BW-2-100	Focus Coil Shunt	
R114	68KΩ	½	RC20AE683M	BTS-68K	Voltage Divider	
R115	10Ω	1	RC30AE100K	BW-1-10	Bias Network	10%
R116	470KΩ	½	RC20AE474M	BTS-470K	Sync. Discriminator Load	
R117	470KΩ	½	RC20AE474M	BTS-470K	" " "	
R118	1 Meg.	½	RC20AE105M	BTS-1 Meg.	" " "	
R119	470KΩ	½	RC20AE474M	BTS-470K	AFC Filter	
R120	560Ω	½	RC20AE561M	BTS-560	Horiz. AFC Grid	10%
R121	10Ω	½	RC20AE100K		AFC Input Load	10%
R122	27KΩ	1	RC30AE273K	BTA-27K	Horiz. AFC Voltage Divider	10%
R123	39KΩ	1	RC30AE393M	BTA-39K	Horiz. AFC Screen Decoupling	10%
R124	47KΩ	1	RC30AE473K	BTA-47K	Horiz. AFC Plate	
R125	39KΩ	1	RC30AE393M	BTA-39K	" " "	10%
R126	10KΩ	½	RC20AE103M	BTS-10K	Horiz. Osc. Screen Decoupling	
R127	5000Ω	10	V5925	AB-5000	Horiz. Osc. Plate	
R128	27KΩ	½	RC20AE102M	BTS-27K	Horiz. Osc. Grid	10%
R129	6800Ω	½	RC20AE682M	BTS-6800	Differeniator	
R130	560Ω	½	RC20AE561K	BTS-560	"	10%
R131	220KΩ	½	RC20AE224M	BTS-220K	Horiz. Discharge Grid	
R132	3900Ω	½	RC20AE392M	BTS-3900	Horiz. Peaking	10%
R133	680KΩ	½	RC20AE684M	BTS-680K	Horiz. Discharge Plate	
R134	220KΩ	½	RC20AE224M	BTS-220K	Horiz. Output Grid	
R135	100Ω	2	RC40AE101M		Horiz. Output Cathode	
R136	4700Ω	2	RC40AE472K	BT-2-4700-5%	Horiz. Output Screen Decoupling	5%
R137	4700Ω	½			Mixer Coil Shunt	10%
R138	8KΩ	½	V5963		Horiz. Damping tapped @ 4.5KΩ,6KΩ and 7KΩ	
R139	1 Meg.	½	RC20AE105M		HV Filter	
R140	82Ω	½	RC10AE820K	BW-½-82	FM RF Cathode	10%
R141	15Ω	½	RC10AE150M	BW-½-15	Parasitic Suppressor	
R142	470KΩ	½	RC10AE474M	BTS-470K	FM RF Grid	
R143	2.2 Meg.	½	RC10AE225M	BTS-2.2 Meg.	AVC Network	
R144	5600Ω	1	RC30AE562K	BTA-5600	FM RF Plate	10%
R145	470KΩ	½	RC10AE474M	BTS-470K	Mixer Grid	
R146	1000Ω	½	RC10AE102K	BTS-1000	Mixer Plate Decoupling	
R147	4700Ω	½	RC10AE472K	BTS-4700	Conv. Plate Decoupling	10%
R148	12KΩ	2	RC41AE123K	BT-2-12K	Osc. Anode	10%
R149	22KΩ	½	RC10AE223K	BTS-22K	Osc. Grid	
R150	1 Meg.	½	RC10AE105M	BTS-1 Meg.	AVC Network	
R151	1 Meg.	½	RC10AE105M	BTS-1 Meg.	" "	
R152	33KΩ	1	RC30AE333K	BTA-33K	IF Screen Dropping	10%
R153	3300Ω	1	RC30AE332K	BTA-3300	IF Plate Decoupling	10%
R154	68Ω	½	RC10AE680K	BW-½-68	IF Cathode	
R155	47KΩ	½	RC10AE473M	BTS-47K	Diode Filter	
R156	2.2 Meg.	½	RC10AE225M	BTS-2.2 Meg.	Diode Load	
R157	1500Ω	½	RC10AE152M	BTS-1500	Tone Compensation	
R158	68Ω	½	RC10AE680K	BW-½-68	2nd IF Cathode	
R159	33KΩ	1	RC30AE333K	BTA-33K	2nd IF Screen Dropping	10%
R160	3300Ω	1	RC30AE332K	BTA-3300	2nd IF Plate Decoupling	10%
R161	220Ω	½	RC10AE221M	BW-½-220	RF Filter	
R162	15KΩ	½	RC10AE153K	BTS-15K	Ratio Det. Diode Load	10%
R163	47KΩ	½	RC10AE473M	BTS-47K	De-emphasis	
R164	220KΩ	½	RC10AE224M	BTS-220K	AVC Network	

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	WESTINGHOUSE PART No.	IRC PART No.	
R165	3.3 Meg.	½	RC10AE335M	BTS-3.3 Meg.	AFC Network
R166	10 Meg.	½	RC10AE106M	BTS-10 Meg.	AF Grid
R167	470KΩ	½	RC10AE474M	BTS-470K	AF Plate Load
R168	150KΩ	½	RC10AE154M	BTS-150K	AF Plate Decoupling
R169	470KΩ	½	RC10AE474M	BTS-470K	Output Grid
R170	270Ω	1	RC30AE271K	BW-1-270	Output Cathode 10%
R171	2200Ω	½	RC10AE222K	BTS-2200	Ant. Loading

Note. On sets using 1 Meg Vert. hold control use 1.5 Meg in this application.
Set slider at 3300Ω

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	WESTINGHOUSE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ 2.26A	670VCT @ .320 ADC	5VAC @ 3A	5VAC @ 2A	V-5836			
		SEC. 4	SEC. 5	SEC. 6				
		5VAC @ 2A	6.4VAC @ 3.7A	6.4VAC @ 3.9A				
T2	117VAC @ .76A	580VCT @ .114 ADC	5VAC @ 2A	6.6VAC @ 2.5A	V-6131			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		WESTINGHOUSE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.					
T3	42Ω CT	36Ω Tap @ 9Ω	V-5835				Hor. Sync. Disc. Trans.
T4	178Ω	810Ω	V-5837	A-8121	TBO-1	A-4000	Vert. Block Osc. Trans.
T5	400Ω Tap @ 180Ω	SEC. 1 10.2Ω Tap @ .54Ω	V-5834	A-8117			Hor. Output Trans.
		SEC. 2 0Ω					
T6	610Ω	9.3Ω	V-5838	A-8115	TSO-1 Ø	A-3035 Ø	Vert. Output. Trans.
T7A	14Ω		V-6073	DY-1			Hor. Deflection Yoke
B	68Ω						Vert. Deflection Yoke
T8	240Ω		V-5900	FC-10			Focus Coil

Ø Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		WESTING-HOUSE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T9A	6100Ω	3.2Ω	540Ω	.6Ω	*	A-3877	RO-9	A-2930	* Used in model H-196
B	5400Ω	3.2Ω	560Ω	.6Ω	#	A-3823	RO-9	A-2902	# Used in model H-207
T10	4800Ω	3.6Ω	400Ω	.4Ω	V-5798#	A-3823	RO-9	A-2902	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA				INSTALLATION NOTES
	FIELD	V. C. IMP.	WESTING - HOUSE PART No.	JENSEN PART No.	QUAM PART No.		
SP1A	1000Ω	3.2Ω	V-5978 *	ST-191 MOD.F5-W	52E10		* Used in model H-196.
B	1000Ω	3.2Ω	V-6268 #		10E10		# Used in model H-207.
SP2	PM	3.2Ω	V-5871 #	ST-119 MOD.P10-T	10A31		
	CONE DIA.	V. C. DIA.					
SP3A	5"	9/16"					
B	8 1/2"	3/4"					
SP4	8 1/2"	3/4"					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (@ CURRENT 1000 ∿)	WESTING. PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
L1	.127A	255Ω	9 Henry	V-5821	C-2326 Ø	R-8120	C-2993Ø	Ø Drill one new mounting hole.
L2	.114A	200Ω	5 Henry	V-6161				

COILS (RF-IF)

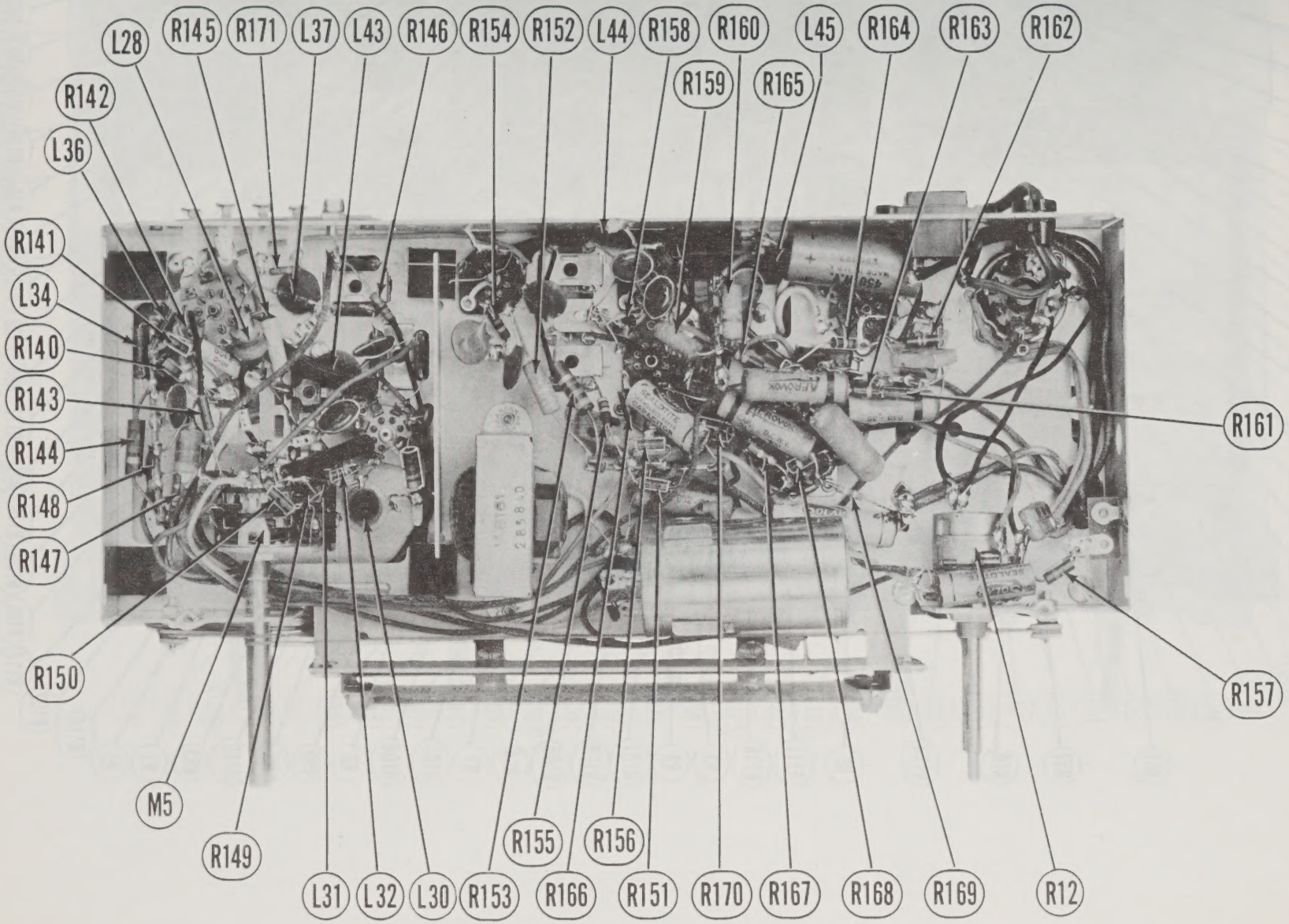
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L3	Ant. Coil	0Ω				Part of Tuner Assembly Pt. #V-5941-1
L4	Ant. Coil	0Ω				" " " " " "
L5	Ant. Input	.2ΩCT				" " " " " "
L6	Fil. Choke					
L7	1st Video IF	.1Ω	0Ω	V-5905-1		
L8	Fil. Choke	1Ω		V-4886-1		
L9	2nd Video IF	.1Ω		V-5903-2		
L10	Fil. Choke	1Ω		V-4886-1		
L11	3rd Video IF	.1Ω	0Ω	V-5905-2		
L12	Fil. Choke	1Ω		V-4886-1		
L13	4th Video IF	.1Ω	0Ω	V-5905-3		
L14	Fil. Choke	1Ω		V-4886-1		
L15	IF Trap	0Ω	0Ω	V-5899		
L16	Video Det.	.1Ω		V-5903-2		
L17	Peaking	5.5Ω		V-5902-1		Inductance-140 Microhenries
L18	Peaking	4.8Ω		V-5902-2		Inductance-115 Microhenries
L19	Peaking	4.8Ω		V-5902-2		Inductance-115 Microhenries
L20	Peaking	5.5Ω		V-5902-1		Inductance-140 Microhenries
L21	1st Sound IF	.2Ω		V-5932		
L22	2nd Sound IF	.2Ω	.2Ω	V-5933		
L23	Ratio Det.	.2Ω	0Ω	V-5939		
L24	Fil. Choke	.5Ω		V-4886-2		
L25	Horiz. Linearity Control	35Ω		V-5901		
L26	Width Control	.3Ω		V-5904		
L27	AM Loop Ant.	0Ω		V-5982-2		
L28	Loop Loading	2Ω		V-6157		
L29	FM Dipole Ant.	0Ω		V-5986-3		
L30	AM Osc.	9Ω		V-6164		
L31	RF Choke	.5Ω		V-4886-2		
L32	RF Choke	0Ω		V-4886-7		Wound on 22Ω resistor
L33	FM Osc.	0Ω		V-6138		
L34	RF Choke	1.5Ω		V-4886-4		
L35	FM Ant.	0Ω		V-6139		
L36	RF Choke	0Ω		V-4886-10		Wound on resistor
L37	RF Plate Chk.	0Ω		V-4886-6		Wound on 820Ω resistor
L38	1st FM IF	.5Ω	.5Ω	V-6142		
L39	1st AM IF	16Ω	16Ω	V-6130	16-6678	
L40	2nd FM IF	.5Ω	.5Ω	V-6129		
L41	2nd AM IF	15Ω	15Ω	V-6130	16-6678	
L42	Ratio Det.	1Ω	0Ω	V-6128		
L43	Fil. Choke	.5Ω		V-4886-2		
L44	Fil. Choke	.5Ω		V-4886-2		
L45	Fil. Choke	1Ω		V-4886-1		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA WESTINGHOUSE PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	0.15A	Brown			Type #47
M2	Bayonet	6-8V	0.15A	Brown			Type #47

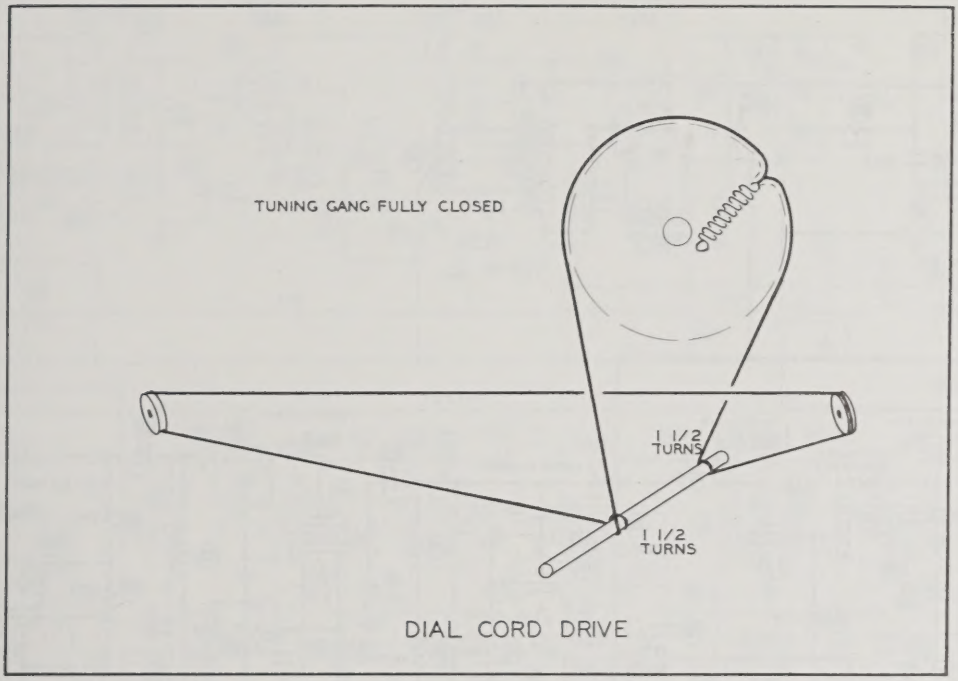
MISCELLANEOUS

ITEM No.	PART NAME	WESTINGHOUSE PART No.	NOTES
M3	Tuner Assembly	V-5941-1	Complete, Less Tubes
M4	Fuse	V-6171-3	250V, 1/4 Amp.
M5	Band Switch	V-6140	
M6	Tuning Cap	V-6137	AM Two Gang (48-552MMF-W/T)(37-212MMF-W/T)
	Ion Trap	V-5940	PM Type
	Knob	V-4362-4	On-Off-Tone, Horiz. Hold (For Sets Using Brown Rear Knobs)
	Knob	V-5028-3	Volume, Vert. Hold (For Sets Using Brown Rear Knobs)
	Knob Assembly	V-5039-2	Brightness, Contrast(For Sets Using Brown Rear Knobs)
	Knob Assembly	V-7878	Fine Tuning (For Sets Using Brown Rear Knobs)
	Knob Assembly	V-7879	Channel Selector (For Sets Using Brown Rear Knobs)
	Knob	V-6146-1	On-Off-Tone, Horiz. Hold(For Sets Using Brass Rear Knobs)
	Knob	V-6146-5	Brightness, Contrast, Front(For Sets Using Brass Rear Knobs)
	Knob	V-6147-1	Volume, Vert, Hold, Rear (For Sets Using Brass Rear Knobs)
	Knob	V-6245-1	Brightness Contrast Rear(For Sets Using Brass Rear Knobs)
	Knob Assembly	V-7892	Fine Tuning (For Sets Using Brass Rear Knobs)
	Knob Assembly	V-7893	Channel Selector (For Sets Using Brass Rear Knobs)
	Channel Indicator	V-6037	For Sets Using Brown Rear Knobs.
	Channel Indicator	V-6308-1	For Sets Using Brass Rear Knobs.
	Cabinet	V-1166-1	Mahogany
	Cabinet	V-1166-2	Blonde
	Socket Assembly	V-5928	Picture Tube
	Terminal Board	V-6294	Antenna
A20	Sound Trap Trimmer	V-3713-3	Ceramic Variable

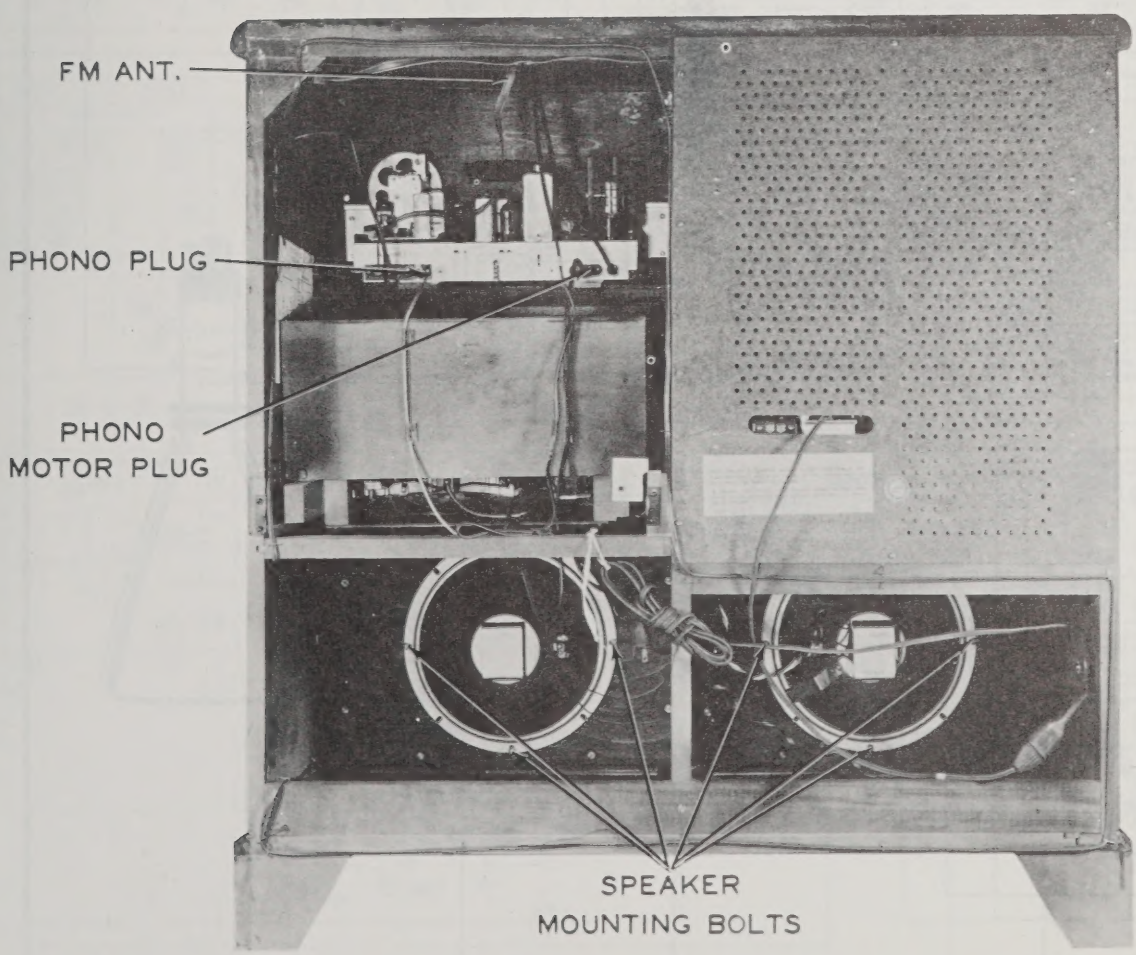


AM-FM CHASSIS-BOTTOM VIEW

DIAL CORD STRINGING



DIAL CORD DRIVE



CABINET-REAR VIEW

SENSITIVITY CONTROL ADJUSTMENT

For average conditions, this control may be set as follows:

1. Disconnect antenna from receiver.
2. Connect VTVM from AGC line to chassis.
3. Turn sensitivity control fully clockwise.
4. Now slowly turn the control counter-clockwise until VTVM reading decreases to 0.6 volt.
5. If voltage will not decrease to 0.6 volt turn control to the point where the voltage stops decreasing.

Another method of adjustment is as follows:

1. Disconnect antenna from receiver.
2. Turn contrast control fully clockwise.
3. Turn brightness control just to the point where the raster appears.
4. Turn the sensitivity control fully counter-clockwise and notice the black noise dots which appear on the raster.
5. Slowly turn the sensitivity control clockwise to the point when the noise dots disappear.
6. Back up the control to point where the noise dots reappear.

The two methods outlined above are for average conditions. For extremely weak or strong signals this control should be adjusted for best picture quality on all available stations.

HORIZONTAL SYNC. DISCRIMINATOR ADJUSTMENT

1. Set the horizontal hold control to the mid point of its rotation. Turn slug B3 until picture "syncs" horizontally.
2. If a black vertical bar appears on picture, center the horizontal hold control, and set the contrast control slightly below normal and adjust B4 until black bar moves off the right hand edge of the picture. The final setting for B1 is when the black bar is off the picture to the right and there is no evidence of "fold-over" or white vertical streaks on the left hand side of the picture.

WIDTH AND HORIZONTAL LINEARITY ADJUSTMENTS

A balance must be obtained between these three adjustments to make the picture symmetrical and fill the mask horizontally.

The width control governs the overall width of the picture.

Horizontal linearity B1 mainly controls the right side of the picture while B2 controls chiefly the center of the picture.

If it is impossible to obtain good horizontal linearity after adjusting the three controls above, it may be necessary to move the tap on the damping resistor R138. Normally this tap is the third lug from the top of the resistor. If the left side of the picture is abnormally contracted move the tap toward the top of the resistor.

Adjustment of B1 may be necessary after the tap has been changed.

DISASSEMBLY INSTRUCTIONS

MODEL H-207AM (TV CHASSIS)

1. Remove eight push-on type control knobs.
2. Remove ten screws holding back cover. Remove back cover by lifting up and pulling out.
3. Remove speaker plug at speaker.
4. Remove three 7/16" hex head bolts holding chassis. Remove chassis.
5. Remove four wood screws holding speaker. Remove speaker.

MODEL H-207 AM (AM-FM CHASSIS)

1. Remove four push-on type control knobs.
2. Remove phono motor plug and phono pick-up plug from rear of chassis.
3. Remove FM and AM antenna leads from terminal strip at rear of chassis.
4. Remove speaker plug at front of chassis.
5. Remove three 1/4" hex head self tapping screws holding chassis. Remove chassis.

MODEL H-196 AM

1. Remove eight push-on type control knobs.
2. Remove eight screws holding back cover. Remove back cover by lifting up and pulling out.
3. Remove speaker plug from speaker.
4. Remove three 7/16" hex head bolts holding chassis. Remove chassis.
5. Remove four wood screws holding speaker. Remove speaker.